THE HOME AND HEALTH IN INDIA AND THE TROPICAL COLONIES

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PREFACE

THIS little book has been written in the hope that it may be of use to the woman who is making her home in India or in one of the tropical colonies of our Empire.

The first part of the book treats of social and domestic conditions; the second deals with the child in health and in sickness; and the third part gives information about tropical diseases and what to do while awaiting the doctor, whose arrival in a distant station may sometimes be delayed for hours and even days.

Although climate and country may be very varied in different parts of the tropics, the general principles of hygiene, housing and sanitation are everywhere the same.

Many women who intend making a home in the tropics have relatives or friends from whom they can obtain first-hand information. This will be a most valuable help in the making of plans and the preparation of outfit. Others, less fortunate, may find it difficult to get into touch with reliable sources of information, and it is especially for these that the first section of the book is intended.

It is very desirable that a woman should have some knowledge of the surroundings of her new home and of the ever-recurring domestic problems connected with it; also of possible emergencies and the best means of meeting them. If her destination is an isolated station, far away from the conveniences of Western civilization, there may be no one at hand from whom she can obtain advice or help in case of need; consequently she will be thrown on her own resources.

The chapters dealing with the care of children are meant to supplement, not to supersede, any other book on the same subject which the mother already possesses. Details of nursing are not given; special points only are emphasized. It is taken for granted that the equipment of the medicine cupboard will include the manuals on Home Nursing and First Aid to the Injured, issued by the Indian branch of the St. John Ambulance Association, and adapted for use in India and the tropics.

In a tropical climate illnesses may develop with alarming rapidity; early recognition of their nature and immediate treatment are all-important and may avert a tragedy. For this reason, symptoms of tropical diseases are described in some detail, more especially of those generally prevalent, and others, more or less serious, which occur in epidemic form. A description is included of common infections, not peculiar to the tropics, by which children are liable to be attacked.

It must be clearly understood that any indications given as to treatment are intended for emergency use, and in no way to take the place of the medical man or woman on the spot, should one be available. The advice of a skilled doctor, experienced in the treatment of the prevailing diseases and conversant with local conditions, should, in case of illness, be obtained at the earliest possible moment.

K. P.

London,
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PART I.—MAKING THE HOME

CHAPTER I

CLIMATE

THE climate of a place in the tropics does not depend entirely on its position with regard to the equator; for certain modifying influences may come into play which affect it for better or worse. Consequently a district lying directly under the equator may be comparatively cool and healthy, while another, situated at a considerable distance north or south, may be unbearably hot.

Height above the sea-level has a great effect in lowering the temperature; stations on the hills may be quite cool, even bitterly cold, while the noonday sun is blazing overhead.

Districts near the sea are cooler than those lying inland at a low level; for the hot rays of the sun are tempered by the moist sea air.

Moving currents of air are more endurable than those which are stagnant, and in seaside places, the evening breeze from the ocean and the early morning land breeze make all the difference to comfort.

Dry heat is more healthy than moist heat, which is debilitating; but a hot dry atmosphere has an undesirable effect on the nervous system and is especially trying to children.

The presence of sand or dust in the air is very irritating to the eyes, nose, throat, and lungs, and is one of the miseries of life in those hot and dry districts which are subject to dust-storms. A sand-laden wind, furiously blowing and making its way everywhere, is much to be dreaded, even though it may be followed by a short period of relative coolness.

Trees and vegetation suitably placed will pleasantly modify the temperature. Cultivated ground covered with herbage tempers a hot wind; but an arid treeless expanse accentuates the discomfort.

India

India is a hot country as any one who has lived in the steaming plains, year in and year out, knows only too well. The heat would at times be beyond endurance, were it not for the fact that it is in many places modified by local conditions, such as altitude, proximity to the sea, prevailing winds, moisture in the air, and the presence of forests and cultivated land.

Every variety of climate is to be found in India and though there are some districts in which, for climatic and other reasons, it is not advisable for a man to have his family with him, there are few stations in which it is not possible to make a comfortable and healthy home, where women and children can live during a great part of the year. People who are obliged to live in India rarely have a choice of station or district, but the cold weather at least can be spent most pleasantly in almost any station, provided that a suitable bungalow, in a good situation, has been obtained.

From the point of view of climate, India has been divided into two parts, the northern or continental, and the southern or peninsular.

The northern portion with the Himalaya mountains as a background to the north, has a definite cold or winter season and a hot summer. The western side is very dry, the rainfall being very much less than that of the eastern side, where the rain is excessive and the atmosphere very moist. Northern India has the distinction of having one of the hottest stations in the world—Jacobabad in the north-west, and one of the wettest—Cherabunji in the north-east. The rainy season or monsoon lasts from June till September.

The southern portion, having the sea on three sides, has a moderately hot climate with very little variation between summer and winter—the heat is much less intense in the south than it is in the north, and the rain is more evenly distributed throughout the year.

In the zone intermediate between north and south there is a gradual transition from one type of climate to the other.

Seasonal Variations.—The cold weather or winter lasts, in the north, from the middle of November till March. It is a really delightful time, with its bracing mornings and bright cool days. The air is fresh and exhilarating, and the delicate tints and soft atmospheric effects make the country very beautiful. In the extreme north the cold is intense, while in the Himalayan hill stations, the winter is like an English one with frost and snow. In the south there is no real cold, though the temperature falls below that of the hot weather. Bombay and Calcutta are scarcely cold, though the wind may at times feel chilly.

By March the sun has gained power, and in the middle of the month it may be really hot. Many families now go up to the hills, but in some localities it is hardly necessary for the migration to take place before April.

Those who have had no experience of tropical heat find it difficult to realize the discomforts of a hot weather in the plains. The long days, passed in the semi-obscurity of the bungalow, doors and windows closed, with perspiration streaming down the face and body, the wakeful, airless nights, with vain attempts to find a cool spot on which to lay the head, render life almost unendurable, even with the alleviations of electric fans and ice. In the mofussil, or out districts, where only hand-pulled punkahs are available and ice is often lacking, conditions are even worse; only work and congenial exercise, with the feeling that life must be carried on and the knowledge that each one is indispensable, enable the ordinary man or woman to remain even moderately cheerful.

The hot weather drags on, until, in June or later, to the weary dweller in the plains, comes the longed-for monsoon—usually after several false warnings. Each day the brassy sky is obscured by heavy clouds which roll up from the horizon, and rain seems inevitable; but the clouds disappear and the unbearable heat continues. Clouds of insects come, apparently from nowhere, and in the evenings the lights are dimmed by tiny flies which in myriads dance round the globes, or carpet the tables with their bodies. At last, when hope is almost abandoned, with dramatic suddenness the rain comes down in Niagara-like sheets, and there is a fall in the temperature. All troubles are forgotten, as one gazes out over the landscape in a maze of wonder. It seems as if a magic wand had been waved over the scene. Within a few hours, a miraculous change has taken place. The parched grey-brown earth has become covered with a delicate film of green which seems to deepen in tint before the eyes. All nature delights in the change; birds and animals and children seem intoxicated. The evenings are gorgeous with the red setting sun, and the gold and purple clouds piled up like the ramparts of some aerial city.

Monsoon rains are truly torrential. Mackintosh and umbrella are of little use, and walking is almost impossible. Only in the dry intervals, or " breaks " in the rains, can outdoor exercise be enjoyed. The periods of intermission are infrequent at first, but as time goes on they occur oftener and last longer, till by the end of September the monsoon is over. During the "breaks," it is hot and steamy, and October opens with a very moist and enervating heat. Towards the end of the month, though the temperature remains high, the atmosphere is drier, and life becomes more pleasant. The cold weather arrives with a rush in November, and winter, the most enjoyable season of the year, begins.

Climate in Special Localities

The North-West.—Peshawar, Lahore, Multan. Intensely hot in the summer, quite cold in winter, especially in the high frontier region. Rainfall not heavy.

Sind, Rajputana, and the Southern Punjab.—Summer hot and dry with wind and dust. Four months of very pleasant weather in the winter season, with cold nights. Low rainfall.

Quetta.—Moderately hot summer. Cold winter, with late spring at the end of April. Dry.

Eastern Punjab.—Delhi. Very trying hot weather, with dust and wind. Cold season pleasant, rather windy. A little rain about Christmas-time. Moderate monsoon.

United Provinces.—Allahabad, Cawnpore, Lucknow. Hot and dry from April till mid-June. Cool and pleasant winter. Moderate rainfall.

Eastern Bengal and Assam.—Calcutta. A short cold winter, nights cool, days not really cold. Moist and hot summer. Heavy monsoon rainfall. Some rain about Easter-time, mitigating the heat, which is also tempered by the sea breezes.

Bombay.—Moderate heat in May and June, sea breezes making the nights bearable. Winter pleasant, not cold. Heavy monsoon rains.

Central India.—Very hot in May and June. A long and trying dry season becoming moister towards the monsoon. Moderate rains.

Deccan.—Poona, Hyderabad. No great extremes of temperature. May and October hot. Winter cool with chilly nights and mornings. Very moderate monsoon.

Madras.—Heat not excessive. Little distinction between hot and cold weather. Moist temperature. Rain distributed throughout the year.

Hill Stations.—These may be grouped into three groups, according to position, *i.e.*—

The Northern or Himalayan, including Simla, Darjeeling, Murray, Dalhousie, Naini Tal, Mussoorie.

The Middle, in which are Mount Abu, Mahableshwar, and other hill stations situated in the Ghats, near Bombay; Panchmari in the Central Provinces; Ranchi in Behar.

The Southern, in which are situated Ootacamund and Kodai Kanal on the Nilgherries.

Northern Group.—The climate of the first group closely resembles that of Alpine resorts. The winter has ice and snow, with bright sunny days, and spells of inclement weather. The spring comes suddenly and is soon over. It may be chilly and wet, though it is a most delightful time with its flowers and budding trees. The summer is very pleasant ; it is sometimes hot in the middle of the day, but the nights are rarely too warm. In the monsoon there is much mist, and the air is moist ; the rain is occasionally very heavy ; but the day rarely passes without sunshine, so it is usually possible to take outside exercise of some kind. The autumn, however, especially the month of October, which is so trying in the plains, is enchanting. The atmosphere is clear, and the views of the snows are beautiful beyond description ; though the temperature is mild, there is a pleasant chill in the mornings, and the air is most exhilarating.

Simla, Darjeeling, Mussoorie, and Dalhousie are bracing except during the rains. Mussoorie is considered specially suitable for children. Naini Tal, beautifully situated in a hollow in the hills, is enervating as it is placed on the borders of a lake. Bungalows built at a higher level, on the surrounding hills, are healthier than those near the water. Murray is not as high as other Himalayan hill stations. It has a pleasant climate, and the rainfall is moderate.

Middle Group.—Of the more centrally situated hill stations, those on the Ghats are very pleasant in the hot weather ; their altitude is not great, and there are no snow-covered ranges, though some of the stations have fine views. These stations are not as bracing as those on the Himalayas. The monsoon rains are excessive.

Mount Abu is beautifully placed on the Aravalli hills near Rajputana; it has a temperate climate. Panchmari is a hill station in the Central Provinces, on the Vindhya range, and is most accessible for those stationed in Central India; it is little used by people living at a distance.

Southern Group.—The Southern hill stations have an equable climate all the year round. They are very popular as places of permanent residence. The Nilgherries are not high mountains, and are never snow-capped; but the country on which the hill stations are situated is beautiful, consisting of rolling uplands, well wooded and verdant.

Kashmir alone of the Indian hot-weather resorts escapes the monsoon. It has a cold bright winter with snow and ice. The summer is delightful, though it is unwise to spend July in the main valley, as the heat is moist and enervating. The hill stations are very accessible, however, and the higher valleys are the resort of a large number of those who like walking, riding, and camp life.

Burma

The climate of Burma resembles that of Eastern Bengal in being hot and moist. The winter is short but pleasant, though it is never really cold.

Rangoon and Mandalay have a very steamy hot weather; but there are healthy hill stations, such as Maymayo, within a little distance, to which European families migrate in the summer.

Ceylon

The climate of the coast is similar to that of South India. The higher altitudes of the interior are cooler. They are very beautiful and well wooded.

China

Northern China has a temperate climate, though in Peking the winter is very cold, and in all parts frost and snow may occur. Dust-storms are frequent and very trying.

Further south the summer temperature is uniformly hot, the average being between 75 and 85 degrees. The skies are cloudless and the sunshine brilliant. The rainfall is heavier in the south than in the north, and occurs during the summer months from May till October. There may be a little rain in the winter; frost and snow are rare.

Federated Malay States and Singapore

The climate is hot and moist, and there is an absence of any cold season, the average mean temperature being from 80 to 85 degrees. The nights are comparatively cool, the average temperature being from 70 to 75 degrees. Rain occurs throughout the year, but the rainfall is heavy during the monsoon, from September till April.

The country is not unsuitable to Europeans if they take precautions against infection, live healthy lives, and have a periodical change to a temperate climate. Women and children should not stay out too long, the latter not after five years of age.

There are government bungalows in the hills of the Western States, at a height of 1500 to 4000 feet. These can be procured when a change of air is necessary. There are also rest-houses in the hills ; a sanatorium, from which sea bathing can be obtained, is provided by the government of Negri Sembilan on the west coast.

North Coast of Africa and North Egypt

On the coast the summer is hot and airless with cloudless sunny skies, and the winter is mild. There is no rain during the summer and very little in the winter.

Inland, the summer heat is greater and the winter is colder, so that in the mornings and evenings warm wraps are necessary. Cairo and Port Said are almost rainless.

South of Cairo, the summer is extremely hot, but the winter is very pleasant with brilliant sunshine and cool exhilarating mornings and evenings. The Khamsin winds from the south and south-east are prevalent in spring. They are hot and enervating and carry much dust. The best time of the year is from November till April.

Uganda

Uganda has an equatorial climate, hot, moist, and, for the most part, unhealthy for Europeans. It is quite unsuitable as a place of residence for women and children, though a few women do make their homes there.

Sleeping sickness occurs, and various tropical infections are frequent in Uganda.

Kenya Colony

Kenya Colony is situated on the equator, but, in its greater extent, the climate is so modified by altitude that instead of being tropical it is healthy and pleasant, with no extremes of temperature.

The low-lying narrow belt near the coast is moist and unhealthy except towards the north. Within the coastal zone is a strip of desert, quite dry except during the rainy season, when vegetation springs up and it becomes a jungle.

The elevated plateau and mountainous district lying further inland have a most delightful climate, very suitable for Europeans.

A large part of the colony is from 4000 to 6000 feet above sea-level. Some of the mountains are snow-capped, and Mount Kenya has several glaciers. The days are hot, but not unduly so, and the nights cool. There is very little difference between summer and winter temperatures. The rainfall is moderate, the driest part of the year being from July to September, the wettest from February to May. There is more rain in the south than in the north.

Nairobi in the interior has a very pleasant climate. Mombasa on the coast is hot and moist, with rather a heavy rainfall, but it is not considered unhealthy as a place of residence. Women and children can live with safety in Kenya Colony.

Tanganyika (late German East Africa)

Near the coast the climate is very hot, moist, and malarious ; the central plateau, at a height of 2000 to

4000 feet, is more healthy. November is the hottest month, June and July the coolest. In the north, the rain falls from February till April and from October till December, the driest months being from June till September. In the south the dry season is of longer duration, the greatest rainfall being between December and April. The climate is not good for children.

Northern Rhodesia and Nyassaland

The lowlands are unhealthy, the heat being great, especially before the rainy season, which lasts from October till April. The higher table-lands have much sunshine, and parts are fairly healthy. Sleeping sickness occurs within limited areas.

Southern Rhodesia

Southern Rhodesia is a well-watered undulating plateau from 3000 to 5000 feet above sea-level. There are no extremes of temperature, the summer is not too hot, the winter is cooler, but not cold. The rainfall occurs chiefly in the summer, from October onwards, with fine intervals, and it lasts until May. From May till September it is dry. The country is on the whole healthy, though mosquitoes are numerous and malaria is prevalent.

Madagascar

The temperature varies with the altitude. The interior is hilly, and consequently the inland temperature is not extreme. The rainy season is in the summer, and cyclones prevail. The east coast is very moist, while the low-lying land on the west side is dry and arid.

Nigeria and West Africa

The northern area is dry and the climate is tropical, resembling that of the plains of India in the hot season. In the central part, there is an abundant rainfall and the air is moist and hot. Tropical diseases, including sleeping sickness, are rife. On the coast the heat is excessive and most unpleasant and unhealthy.

West Africa is quite unsuitable for women and children. A few European women accompany their husbands, and some of these, by taking precautions, manage to preserve a fair degree of health, but residence in West Africa should never be prolonged beyond a very short period.

British Guiana

The lands along the coast, comprising a belt fifty miles wide, are low lying and malarious. Behind these is a broader and slightly more elevated tract of sand and clay, and in the rear are three great ranges of mountains. Mosquitoes are prevalent, only the higher hills being free from them. The climate shows no extremes of heat, and it is never really cold, though in the savannahs the air may be chilly at sundown.

Formerly the country was considered unhealthy for Europeans, but if precautions are taken against malaria and dysentery, and a suitable site chosen for the home, there is no reason why European women, and children up to a certain age, should not manage to keep in good health.

The West Indies

The West Indies are, as a whole, not excessively hot, the climate being pleasant and equable. The winter months from December to May are fairly cool, the hottest months are from July to October. The rainfall is considerable, especially in the mountainous interior of the islands. The wet season begins in May or June, and continues till towards the end of the year.

Barbadoes is a health resort for Europeans, and is made use of by those living in the colonies of South America, who wish to avoid the long journey to Europe or the States.

CHAPTER II

STATIONS AND BUNGALOWS

India

CITIES situated on the coast, such as Calcutta, Bombay, Madras, Karachi, and Delhi, the seat of the Government of India, are naturally very cosmopolitan in character, and in them Europeans of different nationalities and Westernized Indians live in common residential districts. One of the characteristics of an Englishman is to make his surroundings, wherever he may be stationed, as like as possible to those of his own country. The representative Indian changes but little in his ways, and he, too, likes to be amongst his own country people: consequently, as a general rule in India, the European quarters and the Indian or native city are separate.

Many Europeans find it convenient to live in hotels, either taking a complete suite or engaging what rooms they require. This saves the trouble of furnishing and housekeeping, and is convenient when the family is small and the period of stay likely to be short. As a permanency or where there are children, hotel life is not to be recommended. It is expensive, and it is difficult to make a real home in a hotel.

In the Presidency towns, where land is so costly, there is an increasing tendency to build huge blocks of flats, more or less European in design and construction. These have some advantages, and in the cold weather are not inconvenient, but the drawbacks incidental to flat life are accentuated in a tropical country. The accommodation is usually limited, the sanitation is often not above suspicion, the servant difficulties are great, and the flats are generally airless. In the hot weather they are not pleasant habitations, and in any season are unsuitable for children.

The old, roomy, almost palatial bungalows set in a large compound, with spacious, well-proportioned rooms and wide verandahs, are rarely to be obtained nowadays. They are being rapidly replaced by flats or small modern houses with very limited garden space. Rents are very high, ranking with those of London and Paris. European sanitation, with the water-carriage system of conservancy and fixed baths with hot and cold water supply, is gradually being substituted for the primitive system formerly in use. The new method would be an improvement on the old if it were carried out satisfactorily and Indian servants could be trained to obey instructions with intelligence!

Bungalows may be single or may consist of two flats, one above the other, each being provided with its own verandah and domestic offices. A single bungalow is the most desirable. If the choice lies between upper and lower, the upper one is usually to be preferred as being more airy, and less troubled by mosquitoes. In the hot weather the lower flat is perhaps cooler during the day.

Single bungalows may consist of one or two stories. Each type has its advantages. A detached bungalow, surrounded by its own grounds or compound, is naturally the ideal thing for a family. In the less congested and small cities these are the rule, and though the choice of houses may be limited, a suitable one is usually available. Rents in the smaller stations are not high.

The Bungalow.—The typical old-style bungalow with high-pitched roof, single storied, and surrounded by a verandah, has a main central space inside divided by a curtained or screened archway into dining- and drawing-rooms. The other rooms on either side communicate with these by doors. The main approach to the house is up several steps through the front verandah into the drawing-room. All the rooms are spacious and lofty, lighted by clerestory windows as well as by glazed doors opening on to the verandahs outside. There is thus a free airway through the building, from front to back verandah through the reception-rooms, and from the verandahs of one side to the verandahs of the other side through the communicating doors of the rooms, which are usually open. All doors are provided with curtains of cotton material, bamboo, or beads. The plan may be varied in details. Modern-built bungalows are often built on quite a different plan, more like an English country bungalow. Many modern improvements have been introduced, but few are as spacious and cool as those of the old type, which Anglo-Indians prefer.

There are certain differences between an Indian bungalow and an ordinary English house, owing to variation in the climate and customs. Plenty of air and space are essential; therefore, the rooms are large and lofty. Children's nurseries, except in the most modern and specially built houses, are not provided, so one of the rooms must be adapted to their use. The most airy, cool, and comfortable rooms should be chosen. They should be well lighted and spacious with wide verandahs. Mosquito screens should be fixed to door and windows, if not already there. Children's rooms should always be protected in this way.

The pantry is usually placed just outside the dining-room and is connected with the kitchen or cook-room by a covered but open passage. The cook-room is situated at a distance of some 20 or 30 feet from the bungalow.

Each bedroom has its own bathroom: double bedrooms have two, and in addition, dressing-rooms are attached to the principal bedrooms. This provision of a bathroom for each individual is not the extravagant luxury that may be imagined, for except in the larger stations, the sanitation is of a primitive type. It is a shock to the newcomer to find that the commode-system is almost universal. Properly supervised, it is satisfactory and most suitable to the climate, far more so than the water-carriage system already referred to.

The Indian bathroom is a simple affair. It has a cement or stone floor. One corner is divided off by a cement wall a few inches high, and has a gentle slope towards a hole in the wall, which is an outlet for the bath water. There may or may not be a cold water tap; if not, there is a large earthenware or metal receptacle for the water, which is brought by the bhisti or water-carrier. Hot water, when required, is often carried in a kerosene tin to which a handle has been affixed. A tin dipper is provided with which water is baled into the bath, usually an ordinary zinc tub.

A wash-stand, towel-rail, chair, and commode are the other necessaries of the bathroom.

It is the office of the mehtar or sweeper to empty the commode and keep it clean. He or she (mehtrani) is constantly on duty, or should be so. Periodically, he carries away the pan, in a covered wicker basket, to a shed where the general receptacle is kept. No other servant will touch the pan or perform any of the duties of the sweeper, who is an untouchable or outcaste. The contents of the receptacle are removed at night in a special cart. In the more important stations, sanitary inspectors are provided to see that due cleanliness is observed, and that the removal takes place in a proper manner. It is very necessary, however, that visits of inspection should be made frequently and at unexpected times.

Some Points in the Choice of a Bungalow.—The selection of a bungalow in a small station is often not a difficult matter, as the choice may be very limited: in this case the only thing to do is to take what can be got and to make the best of it. As a rule much can be done to improve matters which, at the first glance seem hopeless.

The site of the house should be high and dry, as far away as possible from marshy land, and the neighbourhood of a "tank" or pond should be avoided. Indian dwellings and servants' houses should be at a safe distance. Indian servants often have their families with them; their ways of living are not ours, and for hygienic reasons, especially in malarious and unhealthy districts, close proximity is not desirable.

The aspect of the bungalow in relation to the prevailing winds should be taken into consideration. The bungalow should be placed so that it may obtain the greatest advantage from the breezes; there should be a free current from verandah to verandah right through the house.

The verandahs should be wide and roomy; it must be remembered that, whenever possible, life is spent in the open air.

The roof should be sound. If of thatch, it should have a fair slope and be kept in very good repair. Thatched roofs are cool and airy and have many advantages; but they are apt to harbour bats, birds, mice, and rats, which have a way of getting in the thatch and making their nests or runs in the space between the thatch and ceiling. Roofs of tiles, either country or foreign made, are satisfactory if kept in sound condition. Roofs of corrugated iron are very hot unless well made. They should be double, the upper layer sloping, and the lower layer flat. The ventilating space between should be protected from the invasion of birds and vermin by screening all openings with wire netting. The lower roof should be covered with non-conducting material, such as sand, to the depth of several inches.

Should the roof be a flat one, it is best constructed of concrete on brick arches supported by steel girders. Such a roof, if well made, is waterproof and will not leak ; it is not as cool as thatch, but it does not harbour vermin. The great advantage of a flat roof is that it can be used for sleeping in hot weather. A staircase leading up to it should be placed in a convenient position ; it is well to have the staircase enclosed and a small roofed open shelter erected, so that the sleepers may obtain protection from the moonlight or from sudden showers.

The material of the bungalow walls depends much on the local conditions and requirements. They may be of stone, brick, brick covered with plaster, or even of earth.

It is most essential that the floor of the bungalow should be raised well above the surrounding ground on a substantial plinth. The verandahs should be approached by two or three steps at least. The floors may be of stone, cement, hardwood tiles, or marble—the latter, if procurable, is delightful. Rough stone is not a good foundation for rugs, but cement, or the so-called Indian stone, makes a very satisfactory flooring if well put down. Wooden floors, unless made of hard wood impervious to insects, are unsuitable.

Floors should not be permanently covered with matting: this harbours dust and all kinds of insect pests. Nothing should be laid on the floors which cannot be taken up regularly, shaken, and exposed to the sun and air. The floors should be washable.

The fire-places, which are essential in the north, are mostly constructed of cement, and are well adapted for burning wood, which is the fuel most generally used. The external openings of the chimneys should be protected by wire netting, as birds are apt to build their nests in unused chimneys.

The ceilings of rooms are often unsatisfactory. In many of the old bungalows these consist of a more or less tightly stretched cotton cloth and have a way of getting out of shape and tearing, and looking very unsightly. In newer houses plaster ceilings are used, and are more suitable.

The walls inside are best distempered or lime-washed. This is by far the cheapest, coolest, and most effective way of treating them.

Water Supply.—The quality and purity of the water can generally be depended on in a large station where the supply is under European supervision, and the water is tested periodically. In a small station, or where water for domestic use is obtained from a well, it is most important that it should be tested, and if contaminated, not used until it is adequately purified. All drinking water must be boiled and filtered, and if the results of the testing are in the least unsatisfactory, it should be also purified chemically by the chlorine or some other effectual method. The well should be covered with gauze netting to keep out mosquitoes; its walls should be sound, and should be raised several feet above the surface of the surrounding ground, which should slope away on all sides.

There should be no doubt about the purity of drinking water given to children. It is from negligence in this respect that so many illnesses arise.

Lighting.—Electric light is used for illuminating purposes in the chief stations. It is cleanly, convenient, and comparatively cheap. Gas is practically never used. The ordinary illuminant, however, is oil, with all its drawbacks. Good lamps are obtainable almost anywhere, and the kerosene oil tin is to be seen all over India. Cleanliness and constant attention are necessary; with these, and lamps and oil of good quality, one can manage quite well, though at first the newcomer finds the necessary overseeing rather a trial.

Fans and Punkahs.—In all stations provided with the electric current, electric fans have superseded the old-fashioned hand-pulled punkahs. As regards comfort and convenience, there is no comparison between the two.

Mosquito Netting.—It is desirable to have all doors and windows provided with well-fitting mosquito-proof wire screens; this is specially important in districts which are infested with mosquitoes. With this protection it is possible to throw doors and windows widely open, and thus obtain the full benefit of all cooling breezes.

Heating.—Indian coal is both dusty and expensive. It may be used in combination with wood for heating purposes. A fire in the winter evenings is a luxury in the central part of India, and it becomes a necessity as one goes northwards. In the hill stations it is desirable during the monsoon—and in the chilly mornings and evenings of the spring and autumn it is most pleasant.

For cooking purposes charcoal or wood are used.

The Compound.—A bungalow covered with flowering climbing plants is no doubt most attractive and picturesque, but it is not desirable to have creepers or vegetation too close to the house. Even trees should be at a little distance. Insects are one of the chief dangers in India; many of the most dreaded diseases are caused by insect-carried germs, and anything that harbours or encourages these should be sternly discouraged.

The compound or enclosure surrounding the bungalow may be of considerable extent, containing the flower garden, often a tennis court, stables, sometimes a vegetable garden, and the servants' quarters.

The grounds may or may not be well laid out; usually there are good trees and many flowering shrubs. One of the charms of India is that where water can be obtained, there is always the possibility of making a beautiful garden. With the aid of a good "mali" or gardener, who quickly becomes infected with the memsahib's enthusiasm, wonders may be done in a very short time. In the cold weather and the rains flowers and vegetation flourish, and grass may be kept looking wonderfully green. In the hot weather grass and flowers disappear, but there is a wealth of vivid flowering shrubs and the green, though dusty, trees make refreshing spots of colour on the yellow-grey earth.

Most of our favourite old-fashioned flowers grow well in the cold weather, though they may not have quite an English fragrance. Roses, lilies, carnations, pansies, verbenas, phloxes, delphiniums, snapdragons, violets, mignonette, all flourish. With a little trouble and at small expense, one may have a gorgeous display of colour in the garden. The delight of being able to wander right out of one's room in the early morning into an Indian garden is indescribable. There is a sweet spicy odour which is very characteristic, and the birds make up for their lack of melody by their brilliant hues and charming ways.

The success of a garden largely depends on the water supply. It may be that the station is provided with a good service, and that there is no limitation in quantity, but in most cases all the water has to be drawn from a well by hand or by bullocks. The Indian gardener is very clever at carrying out his own system of irrigation by means of channels, which conduct the water to various parts of the garden. He is aided by the bhisti or water-carrier, who fills his leathern skin at the tank and sprinkles or deluges the flowers, shrubs, and young trees.

The Surroundings.—The civil lines and military cantonments are usually well laid out with wide shady roads.

Churches.—The larger stations have at least one church, to which a chaplain is attached. In the smaller stations, usually there is a church in connection with one of the many missions which are scattered throughout India and the tropics; English services are held in these for the residents.

The Club.—The club is the centre of the social life. It is almost always well run, with facilities for various games, and a library. It is the recognized meeting-place of the station. Most people manage to drop in during the interval between tea and dinner. In some clubs a lawn or playground is set aside for children, and usually children are allowed to make use of the grounds, with reservations, when not in use by members.

The Civil Lines.—In the civil lines are the shops. Some of the larger stations boast of one or more shops kept by European tradesmen, with European goods, chiefly drapery and drugs. The general shop or store, of which there may be several, is amazing in the variety of its contents. Every kind of tinned food, jams, cheese, needles, and other haberdashery, patent medicines, perfumery, and all sorts of unexpected articles may be found. Its proprietor is always an Indian or Parsee.

Cotton and silk materials can be obtained to advantage in the Indian bazaar, and in the European quarter there are usually one or two shops which keep these, as well as general drapery. True the selection may be limited, but these shops are a great convenience to the mother of a family.

Travelling merchants with coolie-borne packs sometimes come to the bungalows and set out their goods on the verandah for inspection. In some parts of India these borahs are a great institution. The new arrival finds them very fascinating, and readily yields to temptation, but the old hand is more wary, and by dint of bargaining sometimes gets hold of wonderful treasures. The Japanese, unfortunately, are beginning to displace the old type of borah, and their wares are often of the most gimcrack description. In the old days, silks, embroideries, metal work, and semi-precious stones, as well as a medley of miscellaneous articles, some of real value, were obtained at a very small price.

The chief drapery firms of Calcutta and Bombay send out illustrated catalogues of their wares ; and by means of parcel post or rail, it is possible to obtain what one requires without difficulty or too much delay. There is a system of " cash on delivery " in connection with the post office, which is sometimes a convenience.

In the chief cities and hill stations during the season smart frocks, hats, etc., may be obtained from milliners and others, who each year bring out a selection of the newest " models " from London and Paris.

Meat and vegetables are sold in the markets which are specially provided in the larger stations, and are under supervision. Calcutta and Bombay have excellent public markets for the disposal of all kinds of food and other household requirements. In many places all meat is inspected and graded according to quality.

The Indian City.—In the mofussil the Indian or native city is situated often at a considerable distance from the European civil lines and military cantonments, in one or the other of which the Europeans live. The Indian city is usually walled. The houses are closely packed together, the streets being very narrow, some of them not wide enough for a wheeled vehicle. Even the main street, in which the chief business is transacted, will hardly allow of one cart passing another. The houses are high and most picturesque, though very dirty. The bazar is a feast of colour. The booth-like open shops filled with many-hued wares, gay silks and cottons, and piles of luscious fruits, with the brilliantly coloured garments of the passers-by and of the loungers (for in the East there is no hurry), make the native city a joy to the lover of colour. The effect would be garish, but with the background of closely set fantastic buildings, the sunny lights and deep velvety shadows, the picture gives joy and satisfaction to the onlooker. True, a captious critic does not approve of what he sees on close inspection, and the state of sanitation is such that diseases when introduced spread with incredible rapidity. It is not without reason that the European residential quarter is built at a considerable distance from the fascinating but dangerous native city.

The Tropical Colonies

Throughout the tropics houses lived in by Europeans are built more or less after the style of the typical Indian bungalow, though the tendency perhaps is to make them less roomy. As in India, they may be constructed of almost any material suitable to the climate.

Furnished bungalows are usually provided for government and other officials. In the cities houses are in great request, the supply not being equal to the demand, and rents therefore are high. Many people live in hotels, and are thereby saved the trouble of housekeeping.

Settlers in a remote district may have to build their own bungalows, in which case while the future home is being erected it is usual to occupy one of the small huts which are quickly put up by natives and are not uncomfortable.

Sanitation, except in the cities, is of a very primitive type; and constant supervision is necessary to ensure hygienic conditions. Household and other refuse should be removed at once and destroyed by burning or burial.

CHAPTER III

THE HOUSEHOLD

India

THE multiplicity of servants in an ordinary household is an amazement and puzzle to the new arrival in the East. She is overwhelmed by the prospect of having to manage an establishment of menservants who speak an unknown tongue and have all kinds of strange prejudices and objections. No wonder she is alarmed! However, she is encouraged by the sight of other homes running apparently on oiled wheels, with mistresses who may have lived in the country for a short time only.

The key of the situation lies in sympathy and tact, with an attempt at understanding the point of view of the Indian, who is essentially religious, and is bound by certain restrictions placed upon him by the ordinances of his religion as well as by custom immemorial. It is useless to argue that these are absurd and illogical, the fact must be recognized when dealing with the unchangeable East. There is no more faithful and devoted servant than the Indian when he has definitely "adopted" his master and mistress, and identified himself with the family. "You are my mother and father," is an expression often used by the Indian to his master or mistress—often perhaps without sincerity. But it does express the attitude of the good Indian servant towards a just and kind employer. Any access of honour to his sahib is honour to himself, and he rejoices in promotions and dignities. Incidentally he expects to rise himself correspondingly, but that is only just! An increase of pay, and even the humblest knows the amount of his master's income, means the ability to give more rupees to a faithful servant. However, a servant of the old type, and such still exist, is willing to share the adversity as well as the prosperity of his master's family.

The Indian servant knows all about rank and precedence. The burra (great) mem-sahib, or wife of the Chief, is in his estimation in a very different position from the wives of the less senior in the Service, and their servants rank accordingly. He fully appreciates the fact that there are "chota lok" or people of inferior rank.

He glories in functions and social entertainments, and likes things to be done in a suitable manner. Hospitality is a joy to him, and an unexpected visitor is never unwelcome. Should the pantry be empty, he duly rises to the occasion with an ingenuity which arouses admiration, and sometimes dismay! A neighbour's larder, or even dinner, may pay tribute; or if neighbours there be none, "are there not always chickens and eggs?" These, with the stores galore to be found in the mem-sahib's store-room, will provide a repast of many courses. A good servant is never.

without resource, and it is well sometimes not to ask questions.

The Indian servant may be either Hindu, Mahommedan, or Indian Christian. Every Hindu belongs by birth to a class or caste, which from long bygone days has had its special profession, occupation, or trade. Each member must undertake that work and no other. He must neither eat nor intermarry with the member of any other caste. The four chief castes primarily were the Brahmins, priests and lawgivers; the Kshatriyas, soldiers; the Vaisyas, traders, moneylenders, cowkeepers, etc.; and the Sudras, whose function was to do work which could not be undertaken by members of the other castes. In modern days there are divisions and sub-divisions, castes within castes. Notwithstanding all efforts made to break down caste distinctions, these still exist and have to be recognized.

The Hindu in household service belongs as a rule to one of the lower castes, though some may be Brahmins, who, however, do no menial work which would involve the breaking of caste. The chief of these is the Chaprassi or commissionaire, truly a magnificent personage in his uniform of scarlet cloth embellished with gold lace. He is a most striking figure and much in evidence in official circles. It is difficult to define his duties. He is stationed outside his master's door, introduces visitors, arranges interviews; with much dignity he carries official documents, and incidentally, it is to be feared, is not unwilling to receive bribes.

Other Hindu servants may be the Peon or messenger, the Chaukidar or watchman, the Mali or gardener, and the Bhisti or waterman. These, being Hindus, may not kill or even touch a dead animal. They are vegetarians, prepare their own food, and eat by themselves. They may not take water from the hand of one who is not a Hindu.

The Mahommedan has his prejudices, fortunately differing from those of the Hindu. To him religious ordinances are an intense reality. At the times appointed for prayer, wherever he may be, unashamed and without self-consciousness, he prostrates himself on the ground and, facing Mecca, the holy city, goes through his devotions. During the weary days of the month Ramazan, which often comes when the heat is at its greatest, he fasts from sunrise to sunset, enduring parching thirst, as not even water may pass his lips. Is it any wonder that he becomes drowsy and forgetful, passing his days in a state of somnolence, and that, when awakened to duty, he appears stupid and confused? Allowances have to be made for him, especially towards the end of the fast and after its completion, when an orgy of feasting begins. It is fortunate that the good Mahommedan does not touch alcohol. He is a meat eater, and may be a Bawarchi or cook, a Mesalshi or sculleryman, and a Khitmatgar or bearer.

The Indian Christian does not as a rule make a good house servant. Only in exceptional instances is he to be recommended for efficiency and reliability.

The Khansaman or butler in a large household is an important and responsible person. He is the head servant, and the smooth running of the establishment largely depends on him. He does the work of a butler, finds the other servants, and engages them with the sanction of his master or mistress. He is responsible for their discipline and good behaviour. In a small household the head bearer takes the Khansaman's place.

The cook in a quiet family may be single-handed, but he usually expects to have a sculleryman, or mesalshi, who prepares the vegetables, etc., washes the crockery, and acts as general assistant. In a larger establishment, where there is much hospitality, he requires one or more additional assistants. The best cooks are Goanese or Portuguese Indians from the south. Most cooks are Mahommedans. Bacon and pork, being the flesh of pigs which are unclean animals, are not eaten by Mahommedans, and many of them object to cooking it.

The Bearer, Khitmatgar or "Boy," as he is called in the south, is generally a Mahommedan. His duties may be those of a valet, of a house-parlourmaid, or of the two combined. The number of bearers employed varies with the size of the family and their manner of living; where there is much entertaining there may be several, but in the average household not more than one or two are needed.

The Mali or gardener, often a Hindu, like most Indians expects to have his assistants, the bhisti helps with the watering, and there is a beldar or coolie for the heavy digging and sweeping.

The Durzi or dressmaker may be on the permanent staff or be engaged for days or weeks at a time. He mends and makes—sitting on a rug in a corner of the verandah with his sewing-machine on the ground. Some durzis are very satisfactory, and, if supervised, do excellent work.

The Dhobi or washerman does his work in a corner of the compound, if the water supply is adequate. Otherwise he may have to do the actual washing in a neighbouring stream. A dhobi-ghat or washing-place is usually assigned for this special purpose.

The Mehtar or sweeper does the menial work of the bungalow and compound.

Women household servants, with the exception of the ayah and mehtrani, are not to be obtained in India. The ayah and her doings will be discussed later. It is enough to say here that she may occasionally be a Hindu, but more often she is an Indian Christian or wife of one of the Mahommedan servants.

The Mehtrani or sweeper may rise in station and become an ayah. From doing the menial work of the nursery she acquires familiarity with the duties of an ayah, and an enterprising woman may succeed in passing herself off as an ayah to some unsuspicious employer.

The servants essential to the smallest household are cook, bearer, and sweeper. These may be increased almost indefinitely according to the position and salary of the sahib. In India the tradition is that the establishment must be in accordance with these. Constant effort is needed to limit the number of servants, for an Indian loves a large household.

Some Europeans living in India have little or no trouble in finding and keeping good servants. Others seem always to be most unfortunate in their selection. Bad and incapable servants there are in abundance, and these unfortunately flock round the inexperienced new-comer and, if engaged, do their worst in the way of robbery and destruction. It is wise to ask the help of a resident whose own home is well served. Her servants will probably be able to find a satisfactory staff amongst their numerous relatives. Chits or recommendations unless personally verified are of little help. After a beginning has once been made, a good employer will have little difficulty in finding and keeping good efficient servants—a weak, negligent, or harsh mistress will rarely be successful with her staff and the running of the household.

Too much must not be expected from them; they find it very difficult to change their ways of doing things, and innovations must be very cautiously introduced. The personality of the employer is a great factor, and if the Indian finds it sympathetic, wonderful things can be done with him. Firmness with understanding should be the watchword. The Indian despises weakness, and injustice rouses him to desperation.

The Far East

The best servants in the Far East are the Chinese. They are capable, honest, and fairly clean.

Like all Eastern servants they have their own ways of doing things; but they can be taught to keep the house in a satisfactory condition, and they make good cooks and can wash and sew well. Much of the comfort of the household depends on the ability of the head boy, who is responsible for the others. As in India, it is the custom to keep many servants, the minimum for a small family being cook, table boy, housewoman, and, if there are children, an ama or nurse. An ordinary English household may have a dozen or more servants, including coolie, gateman, cowman, gardener, and, probably, chair coolies.

The Colonies

In the tropical colonies, the servants are generally natives of the district, and naturally different races vary in capacity and intelligence. Some of them are very teachable and become quite efficient, others are indifferent and require infinite patience. Firm but kind treatment is requisite for their training and management.

Other Points of Importance

The Cook-room.—The cook-room of an ordinary Anglo-Indian bungalow is not overburdened with furniture or appliances. The Indian cook does not approve of labour-saving devices and all the paraphernalia of a European kitchen; he abhors the iron range and can never be taught to use it properly. With a simple cement stove, dekchis, or saucepans, one or two frying-pans, and a very primitive oven heated over the stove, he achieves wonderful results, and is far happier than he would be with an elaborate outfit. The stove is a cement, or brick and cement, structure built up at one end of the small cook-room and standing 2 or 3 feet above the ground. Its upper surface is hollowed out into several cavities about 6 or 7 inches deep and of equal length and width. These are for the fires, and one or any number may be in use, depending on the amount of cooking to be done. Above is an opening for the smoke to pass out into the chimney.

The cooking-pots or dekchis are characteristic. They are of copper or aluminium, with a lid but no handles, a rim round the top, and of various sizes. If of copper, the interior is lined with tin, and the tinning process has to be repeated periodically, otherwise there is danger of poisoning from the copper. This gives opportunity for the cook to levy a monthly charge "dekchi kalai" to cover the cost of re-tinning his pans. The curry stone is an indispensable article; on it he bruises or grinds his herbs and spices for the curry. He needs also several small enamelled pans for sauces, etc., knives, spoons, and a few enamelled plates, dishes, and basins—all these can be obtained from the bazar. The household china must never be allowed in the kitchen. An ice-cream freezer is a necessity, and also a "hot case" for keeping dishes hot in readiness for serving, especially when the sahib is apt to be unpunctual. The hot case stands in or just outside the pantry, and can be improvised by a local Mistri or carpenter from a packing-case placed on end. It is lined with sheet-metal and fitted with one or two shelves of perforated metal and a door. The source of heat is one of the small round iron stoves or sigris in which charcoal is burned. This is placed on the lower shelf and the door closed.

The Indian prefers to do most of his work squatting on the floor, but the cook-room should be provided with a good solid table. There should be one or two almirahs or cupboards, some shelves, and a large wire safe suspended from the ceiling. Wire fly-screens should be fixed to doors and windows—a well-trained cook really appreciates and makes use of these. A cool, airy larder, similarly screened, fitted with shelves and a wire safe, should be attached to the cook-room. The two rooms should be protected by a verandah and connected with the pantry and dining-room by means of a covered passage open to the air.

A constant supply of running water is only exceptionally available. If there is the luxury of a tap and sink, the open drain leading from the kitchen should have a good slope, so that water cannot collect in the vicinity. The drain should be inspected daily, as also the covered bins placed outside the kitchen for the kitchen refuse. Constant vigilance should be exercised to ensure the absence of rubbish-heaps or collections of stagnant water, which are favourite breeding-places of flies and mosquitoes.

Water Supply.—The larger stations usually have a good water supply. In out-of-the-way places it is difficult to be sure of the quality, so all water used for drinking purposes should be boiled and filtered. Unless the servants are very well trained and reliable, personal attention must be paid to this, for impure water is one of the greatest menaces to health and life. Soda-water is used almost entirely for drinking, and if it is made at a trustworthy place should be quite satisfactory. It can usually be obtained from the clubs.

Ice.—Ice is made in most stations where there are Europeans and there is a club. Unless the water used in manufacturing the ice is good and pure, articles to be cooled should be placed on or surrounded by ice. Lumps of ice should not be put in the liquid, thus avoiding any danger of infection by germs.

Milk.—Where there are young children pure milk is essential. In some places, sterilized milk of certified quality may be obtained from dairies, but in others the quality of the milk may vary enormously. Cows are sometimes kept in the compound, and where this is possible, and feeding and milking can be supervised, the purity of the milk is assured. Another plan is to arrange with a cowkeeper to bring the cows in at milking time and to milk them in the presence of a trustworthy servant, who will see that due cleanliness is observed, and that adulteration does not take place. Many are the wiles and devices of the cowkeeper, and he will elude all but the most vigilant of inspectors.

The milk of buffaloes is often mixed with that of cows. It is unsuited for young children, being less digestible than cow's milk, and differing from it in composition. All milk used for drinking should be boiled before use, unless its purity is above suspicion.

Butter.—If there is a good dairy, butter of a satisfactory quality may be obtained. Where there is no dairy, it may be made at home by the cook from cow's or buffalo milk, or it may be necessary to resort to the use of tinned butter.

Butter made from buffalo milk is white in colour and is inferior in taste and digestibility to that made from cow's milk. Artificial colouring makes it more attractive to the eye, but nothing disguises its greasy taste. Tinned butter is of good quality, though it is not to be compared with good fresh butter. In the hot weather butter should be freshly made and kept on ice if possible. The difficulty of keeping it solid is one of the minor troubles of hot-weather life in India.

Bread.—In an isolated station bread must be made at home. Many cooks make quite good bread and excel in turning out scones and rich cakes. The Indian bread is made from ata, a whole-meal flour ground by hand, and, like unleavened bread, is made in the form of very thin round cakes. It is much liked by many Europeans.

Eggs.—The ordinary Indian fowl lays a very small egg, more like the egg of a bantam than of a fowl. Though it masquerades under the name of chicken, the fowl is a very undersized, tough, stringy, and flavourless bird. Where possible, it is a good plan to keep "chickens" in the compound. If they are of a good laying and table strain and are well fed, the family will benefit. Feeding of the chickens, like that of horses, must not be left to the servants' discretion.

Grain is a valuable commodity, and it is a temptation to the Indian to annex a generous share for his own use. If the mem-sahib's chickens do not flourish, provide eggs and grow fat, she must herself see that they get their daily allowance.

Meat.—Beef is seldom to be had in a district populated by Hindus. In a Hindu country such as Kashmir the slaying of cows is prohibited, and even Bovril or Oxo are not allowed to pass through the Customs. Where Mahommedans live, beef may be obtained of fair quality, but it is not like English beef. Mutton or goat is the commonest kind of meat, and is procurable in most places. The joints are extremely small—a leg of mutton serves for one meal only for a small family. The meat is dry, of poor flavour, and destitute of fat. Goat is less good than mutton, for which it is often substituted. It has a strong taste and is stringy. In places where there is a good market the meat is inspected and graded. Pork is rarely procurable, but it is sometimes served in hotels during the cold weather. Bacon and ham may be bought from the stores, but it is only wise to eat it in the cold weather or in the hill stations. Venison and game are available in season.

Fish.—A variety of good fish is to be had in the coast cities. Pomfret is one of the fish most appreciated, It is packed in ice and sent inland in the cold weather and up to the hill stations in the season. Freshwater fish from the rivers can be obtained where there are streams in the neighbourhood.

Vegetables.—There is a profusion of vegetables in the cold weather and rains. Almost all the English vegetables, such as potatoes, peas, beans, cabbages, marrows, asparagus, cauliflowers, etc., are cultivated, and there are others peculiar to the East which are by no means to be despised. In distant places, especially where European taste is not catered for, there may be difficulties in obtaining a constant supply of fresh vegetables to which Europeans are accustomed, and it may be necessary to have them sent periodically.

Fruit.—Fruit is generally to be procured. Plantains or bananas, both small and large, are in general use, delicious oranges, mangoes, grapes, melons, pumilo (which resembles grape fruit), cape gooseberries, guavas, custard apples, and many other fruits are available in their season. Apples, pears, plums, peaches, apricots, and strawberries are grown up in the hills, and are sent down to the markets in the cities of the plains.

Servants' Quarters.—The servants' quarters are, for reasons of hygiene, and comfort to the Europeans, situated at a little distance from the bungalow. Indian servants often have their families with them. It is picturesque to see the bonny brown babies rolling in the sun, for the children are winsome and often beautiful; but Indians have their own ways of living, and in malarious and unhealthy districts especially, their houses may be centres of infection.

The dwellings usually consist of single rooms, built in a long row, or round the sides of an enclosure. To each servant is allotted one or more of these rooms, which are of the simplest possible construction. They are often of mud or earth, with tiled or thatched roof, and are small and dark. They are provided with one or more shelves, on which clothes or household treasures may be placed out of reach of the children. The furniture is limited—simply a charpoy or bed, which is a framework of rough wood strung with rope. The result is a comfortable and cool resting-place, which can be easily moved or stood up on end out of the way. All servants' quarters should have a verandah. Most of the household avocations are carried on in the shade of a tree or on the verandah, and by far the greater part of the day and night are spent in the open air. The Indian servant takes shelter in his quarters only when the weather is inclement or for warmth in the winter.

The cooking-pots and household utensils are of brass or other metal, and are surprisingly few in number. Cooking is done over the cement or mud fire-place of the country, which is set up on the verandah if there is one. A round iron movable stove, in which charcoal or dried cow's dung is burned as fuel, is also used.

The mehtar's quarters are either at one end of the row, separated by a partition or matting screen, or they may be in a separate building at a little distance.

The water supply of the servants is an important matter. If it comes from a well, every precaution must be taken to prevent any contamination of the water. If it is by pipe, a separate stand-pipe and bathing-place should be screened off. Bathing is not only a hygienic necessity but a religious rite to the Hindu, and he should be allowed facilities to perform his ceremonies in a place and manner which are not likely to foul the general supply.

Latrines should be well constructed and frequently inspected.

CHAPTER IV

THE DAY'S ROUTINE

India

PERHAPS the best way of giving a glimpse into the mysteries of Indian housekeeping would be to describe the daily routine of a mem-sahib's life.

At dawn, when she awakes, the first happening is the entrance of the bearer or ayah with early morning tea or "chota hazri." This consists of tea and toast with a little fruit.

In the mofussil, or district, breakfast proper is usually served when the day is far advanced—from 10 to 12; and in the hot weather the bulk of the day's work is done in the early hours when it is comparatively cool.

In large stations during the cold weather, and up in the hills, the European hours for meals are observed, *i.e.* breakfast at 9 a.m., lunch or tiffin at 1.30 or 2 p.m., tea about 5 p.m., and dinner at 8 o'clock.

After dressing, the mistress is ready for an early morning ride or other exercise, or she may at once make her visit to the garden and compound, following this up with her daily household duties. If she has children, naturally her first visit is to the nursery, and the day is punctuated with visits to and fro.

In the compound, the mali must be interviewed and directions given. If good results are looked for, the talk must be flavoured with enthusiasm for what is flourishing, and with sorrow for the failures.

Mysteriously enough, the supply of flowers for the house does not seem to depend altogether on the flowers actually growing in the garden. The mali makes it a point of honour to produce flowers for the table and house. It is the duty of all members of a caste to help one another, and is the mali not blessed with brothers and cousins innumerable, who may have charge of gardens even more prolific than those of the mem-sahib ?

While in the compound, the animals must be visited, and an eye given to sanitation of stables and of the place generally. The servants' quarters should be visited occasionally, and also the dhobi's laundry ground. Inspection of the cook-room should not be omitted.

The interview with the cook is a serious business. The settling of accounts is a complicated affair, entailing much talk and some patience.

In India tinned or preserved foods are much used, and of these the stock must be large, and kept well replenished. An order is given weekly or monthly for groceries and household requisites, either to the general store in the bazar or, if there is no such convenience, to a firm in the nearest large station. Fresh vegetables, fish, meat, and eggs and chickens if no fowls are kept in the compound, are bought by the cook for ready money in the bazar or market. It is customary for him, accompanied by his satellite, the mesalshi, who carries the basket, to visit the bazar, choose his purchases, and return in time for the daily interview with the mem-sahib. The amount spent on what is called "fresh market" depends on the current price of goods and the size of the family, and it may vary enormously. The cook, by "dastoor" or custom, adds a small sum to the amount actually paid for each item. This is his perquisite, and however one may disapprove of the custom, one is dealing with the unchangeable East and must allow it. A capable housekeeper keeps herself informed of the current prices, finds out the percentage allowed by experienced neighbours, and allows a similar increase. A good Indian servant will not resent just dealing, and if his mistress occasionally "cuts" his account, or deducts from the total a sum approximately equal to his excess charge, he will take the hint, and moderate his demands. A mistress who is firm and just, but not mean, is more respected and gets better served than one who lets her servants take advantage of her. The percentage formerly allowed was one anna in the rupee, but it varies in places; and nowadays, both prices and servants' demands have increased.

It is customary to give the cook an advance to cover the amount of the next morning's expenditure. His calculations, though generally correct, are difficult to follow, so it is easier to give him a permanent advance of about the average daily payment. In case of dinner, or large tea and luncheon parties, an extra advance is given. The accounts are balanced each morning.

The dhobi may be the next person to be dealt with. The rule is that he brings back the clean and takes away the soiled linen at a stated hour and day, but if he is living in the compound, he will, when sent for, take away and return a frock or lingerie, washed, dried, and ironed, in a miraculously short space of time. With an almost complete lack of modern appliances, for which he has no desire, he turns out his clothes in a wonderful manner. Armed with a charcoal-heated old-fashioned box-iron, he may achieve almost perfect results. The actual washing is done on the banks of a neighbouring stream, if there is no stand-pipe or well in the compound for his work. A large flat stone on which the wet clothes are banged, and in the process often torn, is his chief appliance. Country soap is used. The water is cold, but sun and wind whiten the clothes, and he may use a process of steaming to help the process. The wet clothes are wrapped up in a sheet which, it is to be hoped, is not a good new one, and made into a big bundle. This is placed on the top of, not within, a gummla or narrow-mouthed metal receptacle filled with water, and heated over a fire on the ground. The steam rises and permeates the bundle of wet clothes. This is a more or less satisfactory substitute for boiling.

One of the most tiresome duties is the giving out of clean jharrans. Jharrans are dusters, and include every species of cloth used in domestic life—tea-cloths, glass-cloths, dusters for cook, bearers, and for other servants. A certain number are given out periodically, and a corresponding number of soiled ones should be returned. Seldom or never do the numbers correspond, and the deficit is always on the wrong side. This happens when counted on return, both from the legitimate user and the dhobi, so a double loss occurs. Ingenious excuses are given for their absence, but they do not reappear. Fortunately the jharrans are country made, and can be replaced. They are not expensive, which is also fortunate, as their life is short in any case; they get so grimed with dirt that much hard banging is needed to make them even moderately clean.

Indian bungalows are well provided with go-downs or store-rooms, which are a necessity. The giving out of stores to cook and khansaman is a daily duty. The store-rooms and cupboards are kept locked; certain articles disappear, but honesty is a relative matter, and the best guardian of one's goods is a faithful head servant who will protect his master's belongings.

After the morning interviews with servants and house inspection, it may be time for breakfast or burra hazri, which is a substantial and pleasant meal. Afterwards, in suitable weather, when it is not too hot, calls may be made. Ceremonial calls may be paid either in the morning from about 11.30 to 1.30, or in the afternoon from 4 till 6, and they must be duly returned. The first call is, in most stations, made by the newcomer; in others, especially the large cities, the usual custom holds. Making a first call is not quite such an ordeal as may be expected. In most cases the hostess knows quite well who and what the new-comer is, and is fully prepared to welcome her. In hill stations and in busy places, where there is much social life, a box for cards, with the owner's name and "Not at Home" painted on it, is placed on the gate-post, or on some tree-trunk conveniently near the entrance. A card dropped into the box is a substitute for a call. It is not etiquette to ignore the "not at home" signal and go up to the house, unless the caller is a close friend of the hostess.

Breakfast and luncheon or tiffin are sociable informal functions, and give opportunity for hospitality on a small scale.

After breakfast, in the hot weather, the afternoon rest is a necessity. It is wise to undress completely, put on a loose wrapper, and lie on the bed. In the cold weather a short rest after tiffin or lunch is desirable, but it is during the trying heat of the plains that the afternoon sleep is so important.

Tea parties and afternoon At Homes are frequent: tennis, croquet, and badminton are much played, and in some stations there are golf links. Almost every woman plays games, rides, or goes in for some sport. In a tropical climate it is necessary to have regular exercise in order to keep fit. The club, to which the whole European population belongs, provides a meeting-place, and is a centre for all kinds of sport and games, as well as for dancing, which is one of the chief diversions of the British in India.

After tea our mem-sahib goes to the club, for almost every one in the station is to be met there during the interval between tea and dinner. Much talk and gossip are heard—in a small station any news is appreciated, and the interesting and amusing talker always has an audience.

Bridge enthusiasts gravitate to the card-room; the young and energetic play tennis; others, watching the game, or idly turning over the last illustrated paper from home, find it very pleasant to sit under the shady trees in the cool of the evening. The leisurely walk or drive home to dinner is one of the most refreshing events of the day.

Dinner parties and dances are frequent; unless official, they are not elaborate functions, but are simple and informal. Everybody knows everybody else, the amount of the income of each one is known, and extravagance in entertaining or dress is not approved. In no country can the comparatively poor have such a good time socially as in India.

Chits.—One of the minor inconveniences of Indian life is the constant interruption occasioned by the arrival of "chits" or notes, and the writing of answers which must be dispatched by the peon or messenger who brings them. It is incredible how the habit of chit-writing permeates the life. Invitations naturally must be written and answered, but all messages, important or trivial, are always written and never sent verbally, however near the recipient may be, if out of ear-shot. This is necessitated by the language difficulty, but it is carried to rather a ridiculous extent. perhaps to give employment to the peon, whose chief occupation is the carrying of messages and parcels.

Language.—A wise woman will, whatever her circumstances, make a serious effort to learn Hindustani, which is understood almost all over India, and is spoken by the servant class everywhere, except in the south, where English is the language used. Hindustani is not a difficult language, and the expenditure of a little trouble and time each day has a very ample reward. True, many of the servants speak English of a kind, and almost all of them understand it. To know nothing of the language is a great handicap, however, in dealing with them, as well as in attempting to get into touch with the people of the country. A woman who can learn languages easily should not limit herself to Hindustani, but should, when she has acquired a little facility in speaking this, turn her attention to the vernacular, or tongue of the local country people. Most British women in India would be happier, as well as better in health, if they had wider interests and more mental occupation. They would derive very real pleasure from getting to know something of the home life of their Indian sisters ; but without a common language there is no possibility of entering into a really personal and sympathetic relationship with them.

The Tropical Colonies

There are very decided differences between the life of an Englishwoman in a country like India, and in one of the more recently settled tropical colonies.

For generations, India has been the home of English officials; traditions of social life and conduct have been handed down and are still generally respected by new-comers. The numerous servants, the enervating influence of the climate, and the comparative luxury of life may, in some cases, lead to the formation of habits of self-indulgence and indolence.

In the newer colonies, however, originality and enterprise are indispensable. Climatic conditions are more favourable to energy and self-dependence; and work, even of a menial nature, is not considered derogatory. The wife of a settler has many duties, and there is full scope for adaptability and resourcefulness. She needs, not only to supervise, but to give actual help; and she must be able to take the place of the cook, house-boy, or of any other servant who may be lacking—to mend and make, and to do the hundred and one odd jobs which fall to the lot of a colonist's wife. If to these qualities and capacities she can contribute a sense of humour and a fund of optimism, she will be a helpmeet indeed.

The wise woman, if she is not already an experienced housewife, will, before her departure, take a course of domestic economy, intended especially for colonists, which should include cooking, butter-making, poultry keeping, gardening, dressmaking, etc. Such a course should prove most useful.

Housekeeping in an isolated settlement requires a good deal of foresight, as many of the supplies come from a distance, and it is not possible to procure them in an emergency. In most places chickens, eggs, and vegetables may be obtained locally, but there may be a lack of both quality and variety, and only the keeping of poultry and the making of a garden, combined with personal attention, will ensure good and appetizing food.

The day will be filled with domestic duties, outside occupations, and exercise; but other interests are needed to prevent monotony and boredom. The possession of a hobby, absorbing and interesting, whether it be art, literature, or music, is almost indispensable to happiness.

The wife of a government official will naturally have many social duties to perform, and will be provided with an efficient domestic staff. Others living in the cities and large stations have fewer housekeeping responsibilities than the lonely colonist's wife. With an English club, and numerous opportunities for gaiety and diversion, their lives are far from monotonous.

CHAPTER V

PREPARATIONS AND OUTFIT

Preparations.—Before making the final decision as to the advisability of taking wife and children to a new home in the tropics, the head of the family should see that each member is medically examined. A doctor who knows something of the climate and conditions, will best be able to judge of the probable effect on the constitution of a prolonged residence in a tropical country; also to give advice about the maintenance of health and the prevention of disease.

The medical examination should take place some time before the departure, so that any condition needing attention can be remedied. Sight should be tested, glasses provided if necessary, and the teeth put in good order.

Vaccination for smallpox and inoculation for enteric fever should on no account be omitted. As infections are sometimes picked up while travelling, it is important that these precautions should be taken before leaving.

Outfit (for the Tropics generally)

In these days of rapid transit, with the convenience of parcel post and European shops in the large stations, the huge outfit of former days is quite unnecessary. It must be remembered, however, that in hot climates frequent and complete changes of clothing are required. People with no experience of tropical life can have little idea of the manner in which, owing to excessive perspiration, garments become saturated with moisture. As a rule, the dhobi or washerman returns the clean linen promptly, but during the rains there is often difficulty in drying and considerable delay in delivery, hence a large stock of lingerie is needed.

Woven Underwear.—Woven vests and under-garments, whether of India gauze (a mixture of silk and fine merino), cotton gauze, silk, or a mixture of silk and cotton, can best be obtained at home. Some tropical outfitters make a speciality of under-garments suitable for the tropics, which, though expensive in the first place, are of fine quality and durable, and in the long run a good investment. A supply of silk, cotton, and woollen stockings should be taken out from home. Silk stockings of Japanese manufacture are sold in the Japanese shops in most cities; they are moderate in price, wear fairly well, and are of various colours and shades.

Even if the residence is to be in a district in which it is never really cold, provision must be made for the time spent in the hills. Warm underclothing such as is worn in an English winter is a necessary addition.

Lingerie.—Cotton materials of different kinds and washing silks may be bought in the bazars and

European shops. The lingerie taken out should be dainty and of good design, so that it may serve as a model for the durzi. Embroidery and hand-made lace are made in many of the missions and may be bought at a small price. If the wardrobe is replenished in this way, a large stock of lingerie is not needed at the outset.

Corsets should be obtained at home. They should be of washable fabric, light but firm, and may be of net, tricot, or other thin material. Rustless bones should be used. Ready-made corsets may be bought in the European shops, but they are expensive, and the selection is not large. It is impossible to have corsets satisfactorily made to measure in India.

A warm dressing-gown will be needed, also several washing rest gowns or wrappers for the hot weather.

Shoes.—White shoes of drill, poplin, suède, or buckskin are almost universally worn in India and the tropics. Chinese bootmakers are to be found in many of the larger stations. They excel at copying, and if good materials are available and a pattern is provided, can turn out very satisfactory shoes of leather or other suitable fabric. It is a good plan to take out a small supply of well-cut boots and shoes and to have them copied locally. In the cold weather and in hill stations light shoes such as are worn in England during the summer are needed.

Strong country boots and shoes of brown leather are suitable for general wear in the tropical colonies. A good supply of these is necessary, also of white drill shoes. A few smart shoes for the house and for wear in the cities should be taken. High mosquito boots of soft leather are very useful in districts infested with mosquitoes.

Frocks and Gowns.—The number of frocks required necessarily depends on the manner of life of the wearer. If her position demands much entertaining and going about, she will need a variety of smart and attractive frocks and hats. Elaborate and expensive garments are at all times out of place in the tropics, and in a quiet station a large wardrobe is unnecessary; a few simple and pretty clothes are all that are required.

Cold Weather and Hill Stations.—For cold weather in India and hill stations, a tailor-made frock or coat and skirt of light weight woollen material, preferably washable, also a few skirts and jumpers or shirts for sports, and a warm coat for day wear are required; and a wrap for the chilly evenings must not be omitted. Frocks for afternoon and evening wear should be of thin texture. Tropical sunshine is bright, therefore light colours are more pleasing than dark shades and sombre hues. All gowns should be carefully selected, remembering to choose only those of material suitable to a tropical climate. Some silks, such as taffeta, split at once, tinsel embroideries tarnish quickly, sequins become sticky, and artificial flowers soon lose their freshness.

Furs are generally worn—even a fur coat is a comfort on chilly days when driving. Furs of fair quality can be bought in the hill stations.

A raincoat of double texture but light in weight is indispensable. Rubber coats are useless.

A strong umbrella is needed in the hills. For real service and protection from the sun, the umbrella of cotton or tussore, lined with green, must be used; it may be obtained locally. Sunshades to match the dress should be taken for special occasions.

Hot Weather in the Plains.—During the hot weather in the plains and all the year round in Southern India and the Far East, thin white washing materials or those of pale shades in fast colours, are universally worn—cotton or linen in the mornings, and muslin, voile, georgette, crêpe or thin silk for smarter wear in the afternoons or evenings. Pretty and simply made frocks are needed, not only for wearing, but also for copying by the durzi or tailor. A few lengths of inexpensive material from home, in cotton, muslin, or linen, will make a pleasing change from the silks or cottons obtained locally. Only materials which wash are really satisfactory in a hot moist climate.

Hats.—Simple hats for morning wear and others suitable for social functions, may be taken; these can be worn in the hills and during the cold season, and after sundown in the hot weather of the plains. The orthodox and very necessary topee, covered with drill or tussore, is to be bought everywhere in the tropics. A more attractive variety, made of pith in various shapes and covered with fancy straw or silk and trimmed, is sold by European shops in the cities.

Milliners and dressmakers with a stock of hats and gowns from London and Paris, visit the larger stations during the season, and some will make up materials to order. Naturally these goods are expensive, but it is very convenient to be able to obtain smart clothes in an emergency.

At least one riding habit, or ride astride coat and breeches, of good cut, made of a tropical light-weight cloth, should be taken out by those who intend to ride. A good durzi will copy it very satisfactorily in drill, tussore, or other material.

Gloves.—Gloves are necessary in the cities and fashionable hill stations; during the hot weather in the plains, except for official functions, they are not worn. Kid and suède soon deteriorate in hot and moist atmospheres, so it is unwise to take out a large stock of any gloves except those of fabric, which are much more suitable to hot climates. Where a large supply of gloves is needed, it is much better to have them sent out periodically from home.

The Tropical Colonies

In the high altitudes of the tropical colonies English country clothes, like those worn during a hot summer at home, are suitable for wear. Thin washing materials are needed in the coastal cities where the climate is hot and moist. It is unnecessary to take out a large stock of washing coats and skirts, since cotton materials may be obtained locally and made up in the cities quite satisfactorily, if a good pattern is provided.

Children's Clothes

Children need warm clothing for the cold weather and in the hills. A thick coat is required for use on chilly mornings and evenings, and woollen stockings, strong shoes, and a good raincoat are necessary for the hills. Shoes should always be worn in the tropics, for it is not safe to walk about with unprotected feet, even in the house.

A warm dressing-gown is essential. For night wear pyjamas are suitable, and they should be of wool for the cold nights, and of fine wool and cotton mixture for the hot weather.

Vests and combinations of gauze, both thick and thin, are required. It is well to have an ample stock to allow of frequent changes.

Frocks and suits as would be worn by children in England are needed, with the addition of numerous washing garments. All should be very simply made and should fasten easily. The children's wardrobe can always be replenished with materials obtained locally.

Party frocks, with appropriate shoes and stockings, should be included in the outfit if the residence is to be in a station where there are other children.

Topees must always be worn; therefore one should be bought either at home or at Port Said, where they are cheaper. Others can be obtained later. It must be remembered that a topee, to be of any use, must be of adequate thickness, and of a shape to protect the back of the head and neck.

One or two pretty hats should be taken for afternoon wear in the hills or cold weather.

Customs.—A small duty is charged on all clothes sent out from home by post or otherwise. The cost of parcel postage is small, but it must be taken into consideration when calculating the cost of articles dispatched.

Furniture and Furnishings

India.—The British population in India is a floating one. In all the Services, changes of station are frequent, and it is seldom that the whole period of a man's service is spent even in one province. Fortunately, a Home is something portable and does not depend on location. The Englishwoman in India soon learns this, and is always ready to pack up her belongings at very short notice, not without grumblings, it is true, but in the main cheerfully, optimism being one of her most characteristic qualities.

The annual visit to the hills alone makes a woman realize that it is wise to limit her possessions, though curiously enough, of all women, the Anglo-Indian cannot resist the temptation of collecting brasses, rugs, embroideries, and treasures of all kinds. She usually goes back to her winter quarters laden with trophies obtained from the too fascinating shops in the bazar of the hill station.

Heavy furniture especially is a great encumbrance. Distances are great and the expense of moving is proportionate. Some people sell their old and buy new furniture each time of moving, others always hire.

In every station of any size there are furniture dealers who hire, buy, and sell. Auction sales take place frequently and furniture constantly changes hands. Much of it is according to a standard pattern, plain, serviceable, and ugly. It is best made of teak, a hard and heavy wood which resists attack by white ants and other insects which destroy softer woods as well as fabrics.

Elaborate and costly furniture may be bought in the larger cities, but the prices are beyond the reach of most people, even if design and materials were suitable for a bungalow. Some of the larger stores supply English-made furniture of an ordinary type, but the choice is limited and prices are necessarily higher than at home.

Single iron bedsteads with spring mattresses are in universal use and may be obtained in most stations. Some prefer the inexpensive native bedsteads consisting of a wooden framework, across which interlaced bands of wide woven tape are stretched, making a firm but springy surface, cool and comfortable in the hot weather.

European-made mattresses and blankets are sold in the European stores, and country-made bedding of a cheaper quality, but quite good, comes from Cawnpore, and can be bought in most places. Cotton sheets for hard wear are sold in the bazar shops.

Fine bed- and table-linen, towels, etc., should be taken out from home. The process of washing as done by an Indian dhobi is most destructive, and the life of fine linen is deplorably short. In selecting household linen for use in India this point should be taken into consideration. Strength and durability rather than delicacy of texture should be preferred by people of moderate means.

All household towels, dusters, etc., can be obtained to advantage in India.

Eider-downs, being light and warm, are most useful in the cold weather and should be bought in England.

The essential articles of furniture can always be supplemented by others obtained locally or from the stores. Most districts have their local handicrafts, and some of them produce articles of good design and colour. Carved or inlaid tables, screens, bookshelves, chairs, stools and brassware are often very attractive. Wicker chairs of varying shape can generally be bought, and when upholstered and covered by the durzi are quite useful.

Cutlery and plate should be taken out; they can be bought in Indian cities, but are expensive.

China and glass are sold in the large stores, but the choice is limited. People who are fastidious about their table appointments generally prefer to get their tea, breakfast, and dinner sets from home.

Only exceptionally are the floors of Indian houses sufficiently good and sound to allow of valuable rugs being placed directly on them. There is no difficulty when they are of marble, good parquet flooring, or of hard wood. Matting of local or Japanese make is often used as a covering, but it harbours dust and insects. Where this is used of necessity, it should be regularly taken up, cleansed, and exposed to sun and air. Dhurries or Indian-made cotton carpets are inexpensive and washable, and can be obtained almost anywhere. They are of various sizes and colourings, and form a good foundation for smaller rugs of good quality. Like all floor coverings they should be taken up frequently and well shaken outside.

Indian wool rugs or carpets of good design and colouring can be procured, though some are crude and of poor quality. The best ones come from Amritzar, Agra, or Mirzapore, or are made by prisoners in some of the gaols. Rugs copied from old designs and well made are desirable possessions. Good rugs can never be inexpensive, but their wearing qualities are so superior that, if design and colour are satisfactory, they are cheaper in the long run.

Persian and other Eastern rugs are sold by dealers all over India. Inexperienced people should not buy these without advice from an expert. In most stations there is some one who knows enough about Persian rugs to prevent too flagrant deception.

Cretonnes, chintzes, and other materials for curtains, and chair and settee coverings should be bought at home. They are to be obtained in India, but they are not cheap, nor is the selection large. Plain materials of cotton or silk, either Indian or Japanese, can best be bought in India. They may be dyed to the required shade or colour, or embroidered at a comparatively small cost. The durzi can upholster and cover the chesterfield and chairs, make curtains, and do the hundred and one small repairs required in the house.

Valuable pictures should not be taken out; the risk of damage from climate, insect, and other pests is too great. It is advisable, however, to have a few pleasing and not too precious water-colours, engravings or other pictures, lightly framed, so that they can be easily packed.

A few favourite books should not be forgotten, and it is well to have a small collection of selected standard books in cheap light bindings. The club libraries are full of fiction, usually not of the latest, and their supply of good literature is often lamentably deficient. There are bookshops in the presidency cities, whence new books can be ordered and sent by post, and paper-backed novels can be bought at many of the railway bookstalls.

A few cushion covers, lamp shades, pots for plants, china or glass vases for flowers, etc., should be packed in with the other things.

The Tropical Colonies.—As in the case of those going out to India, it is unnecessary for a colonist to take out heavy furniture from home. Freight is expensive, there is a customs duty on such things, and it is possible to buy from the stores in the cities.

The outfit should be similar to that for India, including plate, cutlery, linen, a sewing-machine, cretonne or other washing material for covering furniture, cushions, books, some pictures and a few articles for decoration; a good modern blue-flame oil cooking-stove may be taken with advantage. Housekeeping is made much more arduous when there are many things to be looked after, so "simplicity, durability, and no superfluity" should be the aim.

CHAPTER VI

JOURNEYINGS

The Voyage.—The duration of the voyage to India is from three to five weeks, the time taken depending on the port of embarkation and the landing-place. If the destination is one of the colonies, the length of the journey naturally depends on the route taken and the geographical position of the colony. In any case the voyage will be a matter of weeks, so foresight and careful planning are necessary in order that clothes suitable to the temperature and adequate in quantity will be available on board.

Unless time is an object it is wise, when proceeding to India or the Far East, to take one of the slower and less crowded boats sailing from Liverpool or London, rather than to join the crowded mail boats at Marseilles. This is especially to be advised where there are young children; the expense is less, the discomforts of the overland journey to Marseilles are avoided, and the children are able to settle down in their new surroundings before the bulk of the passengers arrive. It is better in all cases, if possible, to avoid the inconveniences of changing steamers on the route; for it is most exhausting to have to pack and repack in a hot climate. In most of the steamers very little special provision is made for the comfort of families. It is well when taking the passages to inquire whether there is a bathroom for children, and a place for drying and airing their clothes. Some steamers are provided with a play-room or nursery. Fortunately, most children are good sailors, though occasionally one comes across a child of nervous temperament who may be very sea-sick.

On board, regular hours and nursery routine should be maintained as far as possible. Well-mannered children are appreciated, but badly brought-up, disobedient children who make themselves a nuisance to the passengers are anything but popular on the ship.

Should the family be accompanied by a nursery governess or nurse experienced in travelling, the parents will not be much inconvenienced. The nurse will, however, appreciate having some time to herself each day when she is "off duty," and if she should prove to be a bad sailor the mother should relieve her as much as possible.

A mother travelling alone with children without the help of a nurse, must be prepared to sacrifice her own comfort, and devote herself to them. The meal-times are the chief difficulty. Children breakfast, dine, and have tea together with their nurses before the other passengers. When the mother has no assistance and the children are young she should be with them at table. The stewardess may be induced to give an eye to the children while the mother is having her meals afterwards. If this is not possible, occasionally an arrangement may be made with a friend to allow her nurse to take charge at these times.

It is more satisfactory, though much more expensive, to pay half or the whole fare of a fellow-passenger in return for service. If the assistant is an experienced nurse and a good sailor this plan works well, but if she is an unseasoned traveller it is somewhat of a lottery. When only a proportion of the fare is paid there should be a definite understanding as to the amount of assistance to be rendered.

Travelling ayahs are sometimes available for the journey to or from India; except perhaps for a young child, they are not to be recommended; the objections to them are many.

When the cabin is shared with other passengers every effort should be made not to inconvenience them. As a rule people are very kind and helpful to mothers travelling with children, but such kindness should never be imposed upon and taken as a matter of course.

Weather.—Unless monsoon conditions exist in the Indian Ocean (as they do from June to September), or the weather is unusually bad in the Mediterranean, the voyage is very pleasant. Most people become quite good sailors after the first few days. Calm weather may be expected in the Indian Ocean from October till March. The Red Sea is proverbially hot, with a steamy enervating heat, which, if there is a following wind, becomes almost unendurable; with a head wind it is less trying. When engaging passages always ask which is the cooler side of the ship and choose berths accordingly; so that the very appreciable advantages of the breeze may be enjoyed. Electric fans are now usually fixed in the cabins without extra charge; they are a necessity, and if not provided should be hired from the company.

The weather in the Atlantic varies with the season. In the North Atlantic it may be very cold during the winter months; further south, the weather becomes warmer. Storms may be expected at times, but the voyage south is usually very pleasant.

Clothing.—The voyage to India may be divided into three sections from the point of view of clothing. The first 14 days or so are spent in the Bay, the Mediterranean, and the Suez Canal. Clothing as worn in a temperate climate is needed, with warm wraps; for the evenings are chilly, and the Bay may be very cold. During the four days spent in the Red Sea, very thin light garments are worn, and in the Indian Ocean clothes as for an English summer. In the extreme heat of the Red Sea, dressing becomes an ordeal, and the less children are troubled with clothes the better. Crêpe materials which do not crush and are easily washed out are most suitable. For boys a vest or shirt and shorts, or one-piece garment, and for girls a combination and short jumper frock are ample. Topees or pith sun-hats are not necessary for the voyage as the decks are protected from the sun's rays by roof and awnings. Should the journey be taken either early or late in the winter season, topees should be worn on landing. They can be bought before leaving England or in Port Said. Only in December and January is it really safe for a child to be exposed to the midday sun without the protection of a topee.

Garments of different degrees of warmth should be packed separately so that they may be easily taken out when required. Facilities are given on board for access to baggage labelled "Wanted on Voyage." Clothes should be packed so that, as far as possible, everything needed at each stage of the journey can be obtained from one trunk. An inventory of the contents of each package should be made and placed on top inside; and a copy should be kept for reference. Each trunk should be numbered. It is most tiring to have to unpack several boxes to hunt for one article.

Only essentials should be kept in the cabin, which, however well one manages, is always overcrowded, and without system becomes chaos.

Toys, games, and books for the use of the children during the voyage should be packed in a separate box and given out as required, and it is well to keep some in reserve. For the sake of the other passengers the child should be kept interested and occupied and boredom avoided. If the children are old enough, it is not a bad plan to let them have a daily lesson which can be given by the nursery governess or the mother. This will break the monotony of the day and play will be all the more appreciated.

Children should be taken out East only in the interval between the end of October and the beginning of March, when the Indian Ocean is likely to be at its best and the Red Sea is least uncomfortably hot.

Sleeping on deck is allowed during the latter part of the voyage. Mattress and bedding are carried up by the steward and placed on that part of the deck set aside for women and children. It is much cooler and pleasanter than in the cabin, the drawback being that the decks are cleaned at an early hour in the morning, so that it is necessary to go below and finish one's rest in the stuffy atmosphere of the cabin.

The Voyage Home.—It should not be necessary to remind the homeward bound mother that warm clothing is indispensable for the European end of the voyage. After residence in a tropical climate people seem disposed to take cold very easily. Many a chill which has been the beginning of severe and even fatal illness has been taken in the treacherous Mediterranean. Really warm clothes should be available from Port Said onwards.

Railway Journeys.—On the railway journey from the port of landing in India to the destination thin clothing will be needed, except during December and January, when the days may be chilly and the nights cool. Should the journey be northwards very cold nights may be expected and warm clothing is essential.

It is customary to take bedding with one when travelling. In a canvas hold-all are packed a resai or quilted cover, sheets, pillows, blankets, and perhaps an eider-down for the cold nights. Fewer coverings are needed in the warmer season. The railway carriages are built so that each compartment accommodates four people. There are two lower berths, one on each side, and above them are the two upper berths which are closed during the daytime. The lower berths are used as seats. A lavatory is attached to each compartment.

The distances from place to place in India are so great that it is often necessary to spend several days and nights in the train. People travel a great deal, and soon become used to the inevitable discomforts, learning to make the best of things. Meals are to be obtained either in a restaurant attached to the train, or in one of the station refreshment-rooms during a halt. Tea is brought to the carriage periodically—or it may be made in the carriage.

Some officials have the use of special cars which are provided with conveniences such as kitchen and dining saloon, but ordinary people travelling with children take tea and luncheon baskets equipped with spirit stove and necessary appliances for providing a meal. It is not safe to give milk and other foods bought at a station to children; consequently the food supply for the journey is usually taken from home or the starting-point. An ice-bucket will keep milk and soda-water cool; ice may be obtained at certain stations along the route.

Fortunately the compartments are roomy, otherwise the mountains of luggage (nominally hand luggage) often taken into them by passengers would leave no room for their owners. Bedding, luncheon and tea-baskets, and a suit or dressing-case for each individual are indispensable; all other articles should be placed in the baggage van. The larger trunks should be of strong but not too heavy material, for all baggage is carried by coolies, sometimes for very long distances. One or two steel airtight trunks are very useful to protect valuable clothes and materials from the ravages of insects or effects of climate.

If it is absolutely necessary to take children on a railway journey during the hot season, every precaution against ill effects should be taken. During the heat of the day the windows should be kept closed and the blinds down. Ice in abundance, with an ample supply of soda or other drinking water, should be provided. During the hottest part of the day the punka should be kept going, and the children made to lie down with a constantly wetted cloth over the head.

Should the destination be a hill station, it must be remembered that there is a very sudden and violent transition from the heat of the plains to the cold of the higher altitudes. During the ascent, which may take only a few hours, there is a great drop in temperature and consequent danger of chill. Warm garments should be put on before leaving the train, and additional wraps should be carried and used as required. If the heavy baggage should be taken up separately and delivered later, some warm bedding and extra clothes should be packed with the light luggage. It sometimes happens that there is delay in getting up the heavy trunks, and woeful is the plight of the family who arrive shivering with cold, and perhaps wet through, with no change of garments and insufficient blankets. In every case the wise mother will insist on having these with her, and not risking the ascent without them.

Journeys by Road.—In India it is often necessary to journey by road, as there are many districts not reached by railways, and some hill stations even are without railway connections. There are no hotels except in the more important stations, but along the regular routes at intervals there are rest-houses or dak bungalows, erected and kept up by government. These are at the disposal of travellers on payment of a small fee. They consist of a row of small quarters (bed and bathroom) plainly furnished and containing beds, but no bedding. The bungalow is in charge of a khansaman, who provides food, which is partaken of in a general dining-room. Other bungalows intended for the use of officials are stationed along less-frequented routes. In them no provision is made for food, as officials make their own arrangements for this and have their own servants.

Of late years motor services have been established where roads are good, and they are gradually displacing tongas, the characteristic uncomfortable, two-wheeled, four-seated vehicles of India, which may be drawn by horse or bullock. Coolie-drawn rickshaws are used in some districts. Where the roads are more like bridle-paths and unsuitable for wheeled traffic, various types of chair are in use, such as the palanquin or palki, a rectangular box, and the dandy, a canoe-like seat, both slung on poles and carried by coolies.

The comfortable cape-cart of Africa serves as carriage and inn, and is in general use in the colonies for long road journeys.

PART II.—ABOUT THE NURSERY

CHAPTER VII

THE MOTHER AND THE BABY

The Young Mother.—Of all the mysterious processes of Nature, the most beautiful, surely, is the development of the human child. From the moment when by union of the parents the minute ovum has received the divine gift of life till the time of its birth and entry into the world, it has passed through a wonderful series of changes. Encased in a bag of fluid by which it is protected from strain or jar, the nine months of prenatal life are spent deeply enshrined in the body of the mother, receiving from her life-giving stream, warmth, nourishment, and materials for growth and evolution.

It is the mother to whom is entrusted the responsibility of providing the best possible conditions for the development of the child. Her health, mental as well as physical, should under no circumstances be neglected, and her aim should be to lay in a store of energy and vitality which will not only benefit the child, but will enable her to meet with confidence the ordeal which is before her.

After all, pregnancy and child-birth are natural processes; the former should not be attended by physical discomfort, and many mothers feel unusually well during the time. Should, however, anything unsatisfactory in the mental or physical condition arise during pregnancy, it is an indication that medical attention is necessary. The inevitable pains of childbirth are not purposeless, but are by their nature a tangible evidence to the doctor and nurse of the progress which is being made; and in addition they serve as guidance or as warning of possible danger.

A young wife, far from home, who is looking forward to the birth of her first child, has every need of sympathy and help, especially if she is living in a small station where there are but few European women. Hill stations and cities have all the advantages of skilled doctors, nursing homes, and hospitals; but there may be none of these in a small station. In the latter case it will be necessary to make arrangements for the confinement to take place away in a nursing home, or, if preferred, in a bungalow within reach of an experienced doctor. By facing the situation bravely and making her plans at an early stage, the expectant mother will make things easier both for herself and her husband. As soon as symptoms occur which point to pregnancy, she should see her medical adviser to make sure that she is right in her surmise, and, what is most important, ascertain if there is any condition present which might cause complications.

As regards the choice of a doctor there are experienced European medical practitioners, both men and women, in all the larger stations who would undertake the confinement. It should be remembered that, though there are some extremely clever Indian doctors, only those who have held an appointment in a good midwifery hospital conducted on European lines are likely to be expert in midwifery. Indian women do not allow themselves to be examined or personally treated by Indian men, so the ordinary medical man does not get much practical experience in obstetric medicine. There are Indian medical women who have had training in good European hospitals and medical schools and some of them are skilful and trustworthy. There are, however, many very incompetent women calling themselves "lady doctors" who are a danger to the community.

If it is decided that the confinement is to be at home, or in a hired bungalow, the nurse should be engaged at an early stage of the pregnancy. The doctor may be able to recommend a nurse personally known, or one may be obtained from a Nursing Association which supplies European-trained nurses, and has branches in many of the larger stations. Stress must be laid upon the advisability of having the nurse in residence in good time for the event; this is especially important when the doctor is not within easy call or there is a possibility of his not being able to come at very short notice.

During pregnancy the life should be as normal as possible. Plain food and regular exercise with the avoidance of fatigue or over-strain are important. Constipation should be prevented, and if the teeth show signs of decay they should receive attention without delay. If untoward symptoms appear at any time the doctor should be sent for at once. A calm and cheerful spirit is a most valuable asset and is worth more than any quantity of medicine.

An excellent manual of advice to the expectant mother may be obtained from the Infant Welfare Association, Delhi. It will give all necessary information about preparations to be made and precautions to be taken.

The Baby

Feeding.—There is no question that every child has a right to be fed on the mother's milk, which is the only perfect food for a baby—only in the rarest of cases is it unsuitable. In tropical countries especially, where the risks inseparable from other methods of feeding are intensified, it is the duty as well as the privilege of every mother to feed her own child. Where Nature makes this impossible it is a calamity to both. The climate certainly increases the strain, and in some cases the mother, however willing, is unable to provide (either totally or partially) the child's natural food. It is, however, unusual for there to be an entire failure of the secretion. It is generally possible, if there is any milk at all, to start by partial breast feeding, supplementing with modified cow's milk or other artificial food. If this course is persevered in, even after several weeks, when the mother's health is re-established, she may be rewarded by the appearance of milk adequate in quantity and quality.

From the very beginning regularity of feeding should be the rule. It is astonishing how quickly habits are formed in the young child, and the tenacity with which he adheres to habits once formed is equally surprising. The strain on the mother is very much lessened when regularity is observed and the child is fed every three hours, which experience has shown to be the most satisfactory interval between feeds. Not more than six feeds should be given in the twenty-four hours, and night feeds are quite unnecessary. The child and the mother need a period of undisturbed sleep, during which the stomach as well as other organs can rest. A stomach cannot do its work properly without a periodical rest; in the case of a young child this is essential. If the feeds are given with regularity at seven, ten, one, four, seven, and ten o'clock the mother's life can be adjusted so that the feeding of the child will fit in with her regime.

The feeds should be given slowly, each one taking from 15 to 20 minutes.

If it is found that insufficient food is being taken, a little extra artificial food may be given at the end of each meal, or it may be necessary to substitute artificial food for the mother's milk once, twice, or several times in the day.

The Wet Nurse.—When the mother's milk fails to appear, the best substitute is that of a wet nurse, provided that it is possible to obtain one who is satisfactory in health and disposition. Doubtless the prejudice which exists against native foster-mothers is not without foundation, but with a delicate or premature child and difficulty in obtaining fresh cow's milk or other artificial substitutes, a wet nurse is the best solution of the difficulty. No wet nurse should be employed without a thorough examination by a doctor, and a careful inquiry into her antecedents and personal habits. Indian foster-mothers are usually devoted to their charges, but they need continual supervision. It is difficult to introduce order and regularity in their care for the child.

Sleep.—Newly born children sleep about nine-tenths of the time, waking only for food and the bath. As the child grows older the quantity of sleep necessary becomes less ; a six months' old child should sleep about two-thirds of the time, one of a year 14 to 16 hours, a child between two and three years from 12 to 14 hours, between four and five from 10 to 12 hours.

Young babies usually fall asleep after each meal. Older children should be put down to sleep in the morning and afternoon. Later they should sleep only during the afternoon after their chief meal. In India and the tropics a rest during the day is required by all children. They should be undressed and put to bed in a quiet and darkened room, no talking or play being allowed for a specified time.

Some children find difficulty in going to sleep at once after being put to bed at night. Among the causes which may give rise to this are late hours, excitement, cold feet, lack of fresh air, indigestion, wet clothing, illness, or habit. These causes are all removable. In a healthy child who is properly fed and has adequate exercise, wakefulness is not natural and is always due to some definite cause.

Night Terrors.—These are the bane of some nervous children who regularly wake up at night in a panic of terror. They are due to over-excitement, and when they exist, the child should be kept very quiet towards bed-time. Boisterous play and exciting stories should be prohibited. The evening meal should be digestible, the sleeping-room quiet with a shaded light.

Habits.—Habits are quickly formed in a young child, but are not easily broken. Regularity of feeding, sleep, and exercise should be insisted upon. A child accustomed to be taken up when it cries, constantly demands this attention, and if persistent it may be necessary to have several battles to break the habit. The child should be allowed to finish its cry. On the first occasion this may take an hour or even more, the second may require less time, and by the third the child will probably have learned its lesson. The precaution of seeing that there is no real cause for tears must, however, be taken as a preliminary. The child should be warm, dry, and comfortable. It is extremely unlikely that a child who habitually cries for no adequate reason, will injure himself, if allowed to continue.

The Cry.—A careful mother or nurse will soon learn to distinguish between the different cries of a child.

since crying is the only means it possesses of making its wants known. A young baby exercises its lungs by crying; the cry is loud and strong, and the baby gets red in the face: 15 minutes or half an hour a day is not too long a period for exercise of this kind. The cry of pain is usually strong and sharp, sudden and not continuous; the hunger cry is continuous and fretful; the cry of temper is lusty and accompanied by kicking or stiffening of the body; the cry of illness is a moaning fretful sound, though in illness real crying is easily excited. The cry of habit is insistent and stops immediately the wish is granted, whether it is to be rocked, taken up, carried about, or to have the "dummy" to suck. A child sometimes cries between meals or during the night because he is thirsty. A young baby may have sips of water from a spoon or an older child may drink from a cup or glass.

The Bath.—In the tropics children are apt to perspire profusely, so the morning and evening baths are an important part of the toilet.

For the hot bath, the water should be of moderate temperature and the soap mild and unirritating. A sponging with *cool* but not *cold* water may follow. A good coal-tar soap will be of service when the skin is irritable. The skin should be very carefully dried, especially between the folds, and a dusting powder used consisting of equal parts of zinc oxide, boracic acid, and starch.

A tepid bath may be taken by the older children; a really cold bath is not safe in the tropics. After exercise the child must always wait until the body has cooled before a bath is taken.

Exercise and Fresh Air.—A young baby exercises its limbs by kicking and squirming and waving its arms in the air. From the beginning it should have regular exercise. Twice a day, at least, the baby should be placed on a blanket or rug in a warm room, with no clothing on but a vest, and allowed to roll and kick. At a later stage, a nursery fence placed round a mattress or rug is an admirable playground. As much time as possible should be passed in the fresh air, due regard being paid to the importance of securing protection from the sun's rays, dust, and wind. Cold weather is no drawback to outdoor life, provided that the clothing is ample and the feet and body are warm. In the hot weather of the plains children must not be allowed to be out in the sun; topees must always be worn, and outdoor exercise taken in the early morning and after sundown. It must be remembered that evenings may be chilly in the hills, and warm wraps must be in readiness.

Clothing.—Clothing should be regulated according to the season and the temperature. Babies should not be overdressed. An abdominal band of thin flannel, or a few turns of a gauze bandage round the body, not too tightly wound; a napkin; long-sleeved and high-necked vest; a petticoat with bodice; and a frock—these are all that are necessary. All garments should be open and fastened down the back with flat linen buttons—the three may be slipped on together. They should cover the feet in young babies, but should not be too long. In winter a second petticoat may be used. The material for vest and petticoat may be soft wool, or wool and silk mixture. When the baby is short-coated, knickers of simple shape may be used. The napkins may be of ordinary soft washing material or of a thin cheap soft gauze which can be obtained in the bazar. If of the former material, when once wet or soiled, they should never be used before being washed, boiled, and thoroughly dried. Napkins made of gauze are to be recommended. They are very inexpensive, so can be burned after use, or, if economy is an object, they may be washed and used again. Older children should not be allowed to go shoeless; sandals or soft shoes should always be worn. It is advisable also for them to wear long stockings.

A large supply of clothes is essential. Frequent changes are necessary, especially in the hot season; damp clothes soiled by perspiration are not safe. Fortunately silk and cotton materials of all sorts are to be obtained at a comparatively small cost, and are soon made up. A few well-cut patterns or models and good taste will do wonders. Children look their best in simple, fresh, and clean garments.

In taking washing materials out from home, it should be remembered that few coloured materials will survive the ordeal of the dhobi; most coloured articles return faded and drab-looking.

Physical Development of the Child.—These tables may be of use in indicating the average weight, height, measurement of head, dentition, etc., of children at different ages.

The average	child	at birth		weighs	7	lbs.	and is	20½	ins. long
,,	,,	3	months	weighs	9½	,,			
,,	,,	6	,,	,,	12	,,			
,,	,,	9	,,	,,	16	,,			
,,	,,	1	year	,,	18½	,,	,,	29	,,
,,	,,	2	years	,,	30	,,	,,	32½	,,
,,	,,	3	,,	,,	34	,,	,,	35	,,
,,	,,	4	,,	,,	37	,,	,,	38	,,
,,	,,	5	,,	,,	41	,,	,,	41½	,,
,,	,,	6	,,	,,	45	,,	,,	45	,,
,,	,,	7	,,	,,	48	,,	,,	48	,,

Weight.—A baby who is thriving puts on weight with more or less regularity, the average rate of increase being 5 ozs. per week. During the first few months of its life a premature child is to be counted younger than its actual age. It usually overtakes the normal at a later stage, though occasionally it may continue to be undersized.

From five to ten years boys grow more rapidly than girls, from ten to fifteen girls grow more rapidly than boys.

A child who is growing tall usually becomes thinner.

Circumference of Head.—The average circumference of a child's head is :

14	inches	at birth	
16	,,	6	months
18	,,	12	,,
20	,,	2	years
21	,,	4	,,
21½	,,	12	,,

Dentition.—First set—20 teeth :

Two central lower	teeth may	appear from	5th to 9th	month
Four upper central	„	„	8th to 12th	„
Two lower central Four front double	„	„	12th to 18th	„
Four canine teeth	„	„	18th to 24th	„
Four back double	„	„	24th to 30th	„

At	1	year	a child usually	has	6	teeth
„	1½	years	„	„	12	„
„	2	„	„	„	16	„
„	2½	„	„	„	20	„

The time of appearance of the teeth is very variable. In some families the children cut their teeth early, in others, late. Illness and debility may cause delay in cutting teeth, but the commonest cause of delayed dentition is rickets.

Progress—

An average child holds up his head during the fourth month, but some children can do this considerably earlier.

An average child smiles during the second month and laughs aloud from the third to the fifth month.

An average child recognizes voices and sounds from the third to the fourth month.

An average child reaches for toys and handles them from the fifth to the seventh month.

An average child sits unsupported during the seventh or the eighth month.

An average child bears his weight on his feet from the ninth to the tenth month.

An average child stands with assistance from the eleventh to the twelth month.

An average child can walk alone at fifteen or sixteen months.

An average child begins to talk at about twelve months.

An average child can string words into sentences at two years.

An average child distinguishes colours during the second year.

Respiration—

A newly-born child takes ...	44	breaths	per minute
In the early months a child takes	35–40	,,	,,
At the end of the first year ...	28	,,	,,
From three to four years ...	25	,,	,,
At fifteen years	20	,,	,,

Pulse—

In the	second	year	pulse rate is	110
,,	fifth	,,	,,	100
,,	sixth	,,	,,	90
,,	twelfth	,,	,,	84

CHAPTER VIII

FOOD AND FEEDING

Artificial Feeding of Infants.—Pure fresh cow's milk, modified to the human standard, is the best substitute for human milk. Modification is necessary, as undiluted cow's milk is much too strong a food for a young child; further, there are important differences, both in nature and composition, between the food ideal for the calf and that suitable to the baby.

Milk contains in addition to water three important elements, *i.e.* proteid or curd, fat or butter, and carbohydrates or sugar. There are also certain other substances, minute in quantity, but most important in function and indispensable to nutrition. Among these substances are salts, vitamines, etc.

Human milk contains: Proteid, 1·25 per cent.; Fat, 3·5 per cent.; Carbohydrates, 7·10 per cent.; Mineral matter, 0·27 per cent.

Cow's milk contains: Proteid, 3·5 per cent.; Fat, 3·5 per cent.; Carbohydrates, 4 per cent.; Mineral matter, 0·75 per cent.

It will be noted that in cow's milk there is a large excess of curd and a deficiency of sugar. A mixture of equal quantities of cow's milk and water contains proteid in very similar proportion to that present in a corresponding amount of human milk, but less fat and sugar. The fat may be supplied by the addition of cream or fat in some other form, and the sugar by adding cane-sugar or lactose.

In order to make one pint of cow's milk modified to human standard the requisite quantities are—

½ pint cow's milk ; 1 oz. cream (33 per cent.) ;
½ pint water ; 1 oz. sugar.

Cow's milk varies in richness : milk of average quality contains 33 per cent. butter fat.

The curd of cow's milk is much less digestible than the curd of human milk. It is less finely divided and exists in a different form. It is apt to collect in large masses in the stomach, and is digested with difficulty by the child.

Cow's milk may be made more digestible by the process of peptonization or pre-digestion. In the artificial feeding of premature children and in cases of illness or of weak digestive powers, the milk may be wholly or partially peptonized, according to the child's needs. The process of peptonization should be gradually dispensed with, as the child's stomach becomes more capable of digesting the curd.

A rough method of ascertaining the quantity of humanized milk to be given to the average child at different ages, is to multiply the weight of the child in pounds by two. The product will give the quantity in ounces for a twenty-four hours' supply. This, if divided by the number of feeds during the day, will give the amount in ounces of each feed, *i.e.* a child weighs 10 lbs.; the quantity of modified milk required for a day's supply is 10 × 2 = 20 ozs.; six feeds are given during the day, therefore the amount for each feed is about 3¼ ozs.

Children differ in the quantity of food which they need or can assimilate, and judgment must be exercised in deciding whether a child requires more or less than the average. If he is contented and is flourishing, sleeping well and gaining weight at the rate of about 5 ozs. per week, it may be taken for granted that he is receiving an adequate amount of food; though if he digests the food properly and yet calls for more, he is not getting enough. Overfeeding is most harmful. It results in indigestion, flatulence, and colic, and if long continued, may lead to dilatation of the stomach. A normal child, well trained from birth, will cease feeding when he has had enough, but a child suffering from indigestion will often cry for more food, because he obtains relief from discomfort when his stomach is full. The relief is very temporary, however, and the pain and uneasiness are increased by the remedy. Excess of food, or haste in taking it, will in a healthy child, lead to vomiting within a few minutes.

Habitual vomiting between feeds may be a symptom of indigestion caused by food too rich in fat or sugar. The amount of these added to the mixture may be cautiously reduced. Excessive flatulence or wind may be due to an excess of sugar.

Sterilisation.—All milk given to children should be sterilized when there is any doubt as to its purity. Milk is a splendid food for germs of all sorts, and if harmful germs gain access to it, they will increase and multiply. Milk thus infected may be the cause of many illnesses, and is in truth a poison to the child.

By the process of sterilization, milk may be rend[illegible] safe and free from germs. In sterilizing, milk is heated to boiling point (212° F.), and is kept at this temperature for an hour or more. Milk thus treated if kept on ice will keep sweet two or three weeks, but not longer.

In subjecting milk to a temperature sufficiently high for the destruction of germs, some of the valuable accessory substances which exist in fresh, unboiled milk are destroyed. It is also less digestible, and is more constipating than untreated milk.

A sterilizing apparatus, such as the Soxhlet, should be obtained in all cases where cow's milk is used as the baby's staple food. The apparatus consists of a metal framework resembling the old-fashioned cruet. It holds six bottles, each of which takes one feed. The milk, which should be perfectly fresh and clean, is modified by the addition of the requisite quantities of water, cream, and sugar. A quantity sufficient for twenty-four hours' consumption is measured and divided into six portions, each of which is poured into a bottle. The bottles, sealed with the rubber corks, or with sterile cotton wool, are placed in the frame, which is immersed in a pan about one-third full of water. The lid is placed on the pan and the water is heated and kept boiling for five minutes. The bottles are then removed in the frame and are rapidly cooled and kept on ice or in a cool place. As each feed is needed, a bottle is taken out and placed in hot water to reheat to the required temperature. It is then unsealed and is ready for use. Milk thus treated is only relatively sterile but is safe for ordinary use.

In an emergency, milk may be sterilized by heating it in a pan to boiling point just before use. It should be used directly it is cool enough and should not be kept longer.

Pasteurization.—In this process the water in the pan is brought to a temperature of 160 degrees, and the bottles containing the food are kept at this temperature for thirty minutes, and are then rapidly cooled. Pasteurization will result in the destruction of germs contained in the milk which, however, will not keep sweet for more than a day or two. The taste is more pleasant than that of sterilized milk, and the properties are less altered.

Dried Milk.—In places where pure and reliable cow's milk cannot be obtained, one of the various brands of dried milk is the best substitute. This has the advantage of being sterile and portable, and in travelling or on board ship it is the most satisfactory artificial food for infants.

One teaspoonful of dried milk dissolved in one ounce of water is of the same strength as ordinary cow's milk. It should be remembered that the product is cow's not human milk, and that it is necessary to further dilute with water and to add fat and sugar, as in the case of cow's milk.

Accessory Substances.—Prepared dried milk is in many respects satisfactory, but like sterilized cow's milk, it is deficient in certain accessory substances, such as vitamines, which are necessary for the growth and development of the child. These may be best supplied by the addition to the diet of orange juice and a small quantity of broth made from bones and fresh vegetables. The orange juice may be given sweetened between meals, one teaspoonful daily. Broth may be substituted for part of the water used in one of the feeds. One tablespoonful daily at the age of three months should be gradually increased to three tablespoons at nine months.

When fresh sterile cream cannot be obtained to supply the deficiency of fat, a manufactured substitute may be used. Cod liver oil is useful in small quantities, but it is apt to upset the digestion.

Condensed Milk.—Condensed milk generally contains an excessive amount of sugar. Babies like it, and for a time may appear to flourish; but, though it may be given most usefully in emergencies, as it is a very digestible and delicate food, its use should never be too long continued. It should be gradually replaced by either fresh or dried cow's milk, since it does not contain all the substances requisite for the building up of the body.

Rickets.—Babies fed on condensed milk develop rickets, though they may gain weight rapidly and appear to be thriving; they seem to have very little power of resisting infection, and once attacked by illness quickly succumb.

Unfortunately the results of wrong feeding are seldom apparent at once. Many a mother is proud of her plump and heavy baby, for she is not yet aware of the softness of its bones and flabbiness of its muscles. To the initiated eye the child is already a victim of rickets. It is only at a later stage that the mother will become conscious of the crooked legs and other deformities characteristic of rickets.

The Feeding of a Premature Child.—A premature child may be too feeble to suck, and, if so, must be fed by hand till it has gained strength. The mother's milk may be drawn off and a spoon used for feeding. When the mother's milk or that of a wet nurse is not available, cow's milk modified to human standard may be substituted; but, as the child's digestive powers are very limited, the milk must first be carefully predigested or peptonized. Peptonizing powders (Fairchild's) may be used. One powder is dissolved in a quart of milk. The bottle is immersed in a pan of water, kept at a temperature of 110 degrees, and allowed to stand in it for the required period. Three hours is necessary for complete predigestion. The process is stopped by bringing the milk to the boil. The time of peptonization should be lessened as the child becomes more capable of digesting for itself. A reduction of ten minutes each day may be made till the process is entirely discontinued.

A premature child should be fed with regularity every three hours from birth. The first feed should consist of a teaspoonful of breast milk, or of the modified completely predigested milk, if human milk is not available. The amount given should be gradually increased, till at the end of the first week the child is taking 1 oz., and by the end of the second week 1½ ozs. at each feed, if well absorbed.

Preparation of Food.—Every care should be taken to see that all utensils used in the preparation of a child's food are absolutely clean. Rubber corks and nipples should be boiled and kept in boracic solution. The bottles should be washed in hot water and soap, a special brush being used for cleaning inside. The bottles should then be boiled in water for fifteen minutes before being refilled. The rubber teats should be soft and flexible.

Weaning.—The age at which the process of weaning should begin depends on many factors affecting both child and mother. If the mother is strong and healthy and the child is doing well, the substitution of modified milk may be begun at nine months. In all probability the child will already have been accustomed to having a bottle once or twice in the day. The process of weaning should be gradual, beginning with a midday meal of modified milk. As soon as the child is accustomed to this, a change is made to two feeds a day, and the substitution is continued till weaning is complete. The modified milk may then be strengthened by the gradual omission of water, cream, and sugar, till, by the time the child is a year old, he is taking plain undiluted cow's milk. The change is made gradually in order that the child's digestive organs may be educated by degrees to digest the stronger food.

Weaning should not be begun when the child is teething or is out of sorts, when he is ill, or during the hot weather.

Milk may be given in a bottle or, better still, from a spoon.

In cases when owing to deficiency of milk or illness of the mother, or from any other reason, it is considered advisable to wean the child at an earlier age, it may then be necessary, especially if the child is delicate, to begin by partially predigesting the modified milk. This process, however, should never be continued too long, and must be dispensed with as the child becomes accustomed to the change of food.

If it is thought advisable to wean a child rapidly, modified and, if necessary, predigested milk may be given for all the feeds.

Feeding the Older Baby.—When the teeth begin to appear, a hard crust or smooth bone may occasionally be given to the child, so that he may exercise his teeth and jaws.

As soon as weaning is complete, if the child is nine months of age, or in some cases earlier, the diet should be extended to include cereals. The midday meal may then consist of well-cooked gruel made with barley or oatmeal. Rusks, soft-boiled egg, and potatoes mashed with butter may be gradually introduced.

At twelve months and onwards, the midday meal should consist of broth (chicken or mutton), egg, or beef juice, with a little mashed potato, bread crumbs or crisp toast and butter. Five meals a day only should be given; the first and last should consist of milk, the others of milk with a cereal.

A small quantity of vegetable such as mashed turnip, carrot, or artichoke, fruit juice, prune juice, a little baked apple or milk pudding may be added to the diet by degrees. The bottle should be discontinued at twelve months and the quantity of milk lessened.

From the eighteenth month onwards minced chicken or fresh fish, vegetables, and stewed fruit without skins or seeds, may be given. Cocoa or weak, slightly sweetened, fresh lemon-water may be used as a change from milk. An abundance of water may be given to drink between meals.

After two years, minced under-done mutton or beef may be allowed. When the diet includes butcher's meat, the milk should be restricted to half a pint with the morning and evening meals. Four meals only should be the rule, the late evening one being omitted, and nothing should be eaten between.

Food which should not be given to a child under four years of age:

Meat.—Sausage, pork, bacon, game, kidney, liver, over-cooked meat of any kind, rich sauces or spices, curries of all kinds.

Vegetables.—Raw tomatoes, cucumbers, celery or salads, cabbage, onions, fried vegetables.

Sweets.—Pies or tarts, rich puddings.

Fruit.—Raw bananas (unless mashed to a pulp), currants, nuts, candied or dried fruits, grapes (unless seeds and skins are removed).

Bread.—All new white bread, sweet cakes, especially those containing currants and dried fruits.

Drinks.—Tea, coffee, wine, etc.

The Diet of Children

The diet of older children should be simple and digestible. Highly seasoned and spiced dishes, hot curries, etc., are unsuitable for children of any age. Pish-pash made with chicken or tender mutton, kedgeri, dal and rice, pillau and the sour milk preparations as sold in the bazar (if made at home with pure milk), are both nutritious and popular in the nursery. Fruit should always be served with breakfast. A cereal and milk, an egg or simple dish, toast and butter with some fruit will be ample for this meal. Meat should not be given more than once a day, and then only in small quantities at the chief meal. Crusty wholemeal bread is more suitable than soft white bread, which should be given only in the form of crisp toast.

Food for children should be carefully chosen, and should be as varied and appetizing as possible, and served in an attractive manner.

The child should be taught good table manners from the earliest age. As soon as may be, he should sit up at the table and learn to feed himself, naturally under supervision. He should be made to eat slowly and to masticate properly.

A healthy child has a good appetite and does not need urging to take his food. Some neurotic or delicate children eat very little and have capricious appetites, especially in the hot weather. These children need careful management. Their food should be tempting, but on no account should they be bribed to eat by the offering of rich or indigestible articles. Too much urging and constant watching at meal-times is as mistaken a policy as that of giving sweets, biscuits, or other trifles between meals to make good the deficiency. If a child refuses to eat without any good reason, no food should be given till the next meal.

When a child takes a dislike to some special and necessary article of diet, it may be possible for a time to substitute something equally suitable. An attempt should be made, however, to accustom him to take what is offered, by occasionally giving him a small portion of the food he dislikes at the beginning of a meal, and withholding all other food till this is eaten. To have acquired a habit of being faddy or fastidious about food is a great drawback in later life.

CHAPTER IX

THE HEALTH OF THE CHILD

As a general rule a healthy child is a happy child, though in different children there is great variation in the amount of vitality and animal spirits. The healthy child is cheerful, loves exercise and fresh air, eats well, sleeps soundly, and takes an interest in his surroundings. A fretful, peevish, languid, or lethargic child is not in good physical condition. To a sympathetic observer the aspect and temper will reveal much.

Apart from more obvious indications, Nature has provided three valuable means of ascertaining when and to what degree a child is out of health. These are the observation of temperature, pulse, and respiration. Every mother should be able to take the temperature of her child, to feel and count the pulse at the wrist, and to note the number of respirations per minute. If she is wise, she will avail herself of any opportunity of taking the classes in First Aid and Home Nursing given by the Red Cross Association. She will in doing this acquire much useful knowledge, and will have practice in some of the necessary duties connected with the care and responsibility of children.

Temperature.—The temperature of a healthy child is 98·4 degrees, though in some cases there may be variations from 98 degrees to 99·5 degrees in apparent sound health. There is in the body a wonderful mechanism by means of which in health the temperature remains constant whatever the extremes of heat or cold outside. In all children the mechanism is very delicate, and in some cases the variation may appear to be out of all proportion to the cause, a slight upset being accompanied by a sharp rise and sudden fall. A normal temperature is a most valuable indication of health, one which rises and remains high or is definitely above or below normal is a very sure sign that there is something wrong—that the body is acting on the defensive against some harmful condition. Rise of temperature is one of Nature's most powerful weapons against attack by micro-organisms or germs. In the beginning a rise of temperature is not an evil in itself; but it becomes a destructive agency when the enemy has proved too strong and it remains persistently high.

A raised temperature is one of the earliest danger signals and must never be disregarded. The clinical thermometer should always be at hand in the nursery and used when there is any sign of indisposition in a child. Should there be no rise, it is a relief to the mother, and if the mercury does rise above normal, she will be on her guard. The rise may be merely a transient affair, and the child quickly well again, or it may be the beginning of a serious illness.

It must be remembered that during illness in children the temperature rises proportionately higher than it does in adults. For example, a condition which in a grown-up person would cause a rise to 101 degrees, might in a child produce a rise to 103 or 104 degrees.

Temperature may be taken in the armpit, groin, mouth, or rectum. In young children it is most conveniently taken in the groin or armpit. Older children should be trained to have it taken in the mouth. The rectal temperature is slightly higher (99·5 degrees); it is more trustworthy, but only experienced people should attempt to use the thermometer in the rectum.

The thermometer should be cleansed each time after use, and allowed to stand in an antiseptic solution.

The most common causes of a transient rise of a child's temperature in the tropics are stomach upsets (especially during the cutting of teeth), constipation, and sore throats. More prolonged and serious rises take place in such conditions as malaria, influenza, sand-fly fever, dengue, tubercle, other infectious fevers, dysentery, diphtheria, etc.

Pulse.—The normal rate in children is higher than in adults. At birth, the average rate is 130; it comes down to about 120 at one year, 100 at two years, 96 at three years, and at seven years is about 84. It is often raised temporarily by excitement and other unimportant causes. In acute illness the rate may be as high as 150 and even 170. With rise of temperature there is usually a coincident rise of pulse rate. Slight irregularity in a quick pulse may have no special significance, but a slow irregular pulse may be a sign of brain trouble.

Respiration.—A child in good health breathes regularly and easily. The rate of respirations per minute may vary from 44 in the newly born to 28 at the end of the first year. When there is obstruction in the nose or throat the breathing is rendered difficult and may be irregular. In acute bronchitis it is somewhat increased in rate, while in pneumonia and other lung affections the respirations may be 60 or 70 to the minute.

Care of the Eyes.—In India and other countries with a hot and dry climate, particles of sand and dust, often contaminated by poisonous germs, are liable to get into the eyes; consequently ophthalmia or inflammation of the eyes is very prevalent. As ophthalmia is most infectious and is a dangerous disease often leading to blindness, it is necessary to take a great deal of care to guard children from contact with it. Ayahs or servants having any inflammation of the eyes should be sent off duty at once.

When travelling with children it is wise to take a small bottle of weak boracic solution and a packet of sterilized cotton wool, so that the eye may be bathed if a fly, cinder, or gritty particle enters it during the journey. In bathing an inflamed eye, a precaution, which never should be omitted, is not to touch a sound eye with the pledget which has been used for the other eye, because it is very easy to convey infection from one eye to the other.

Symptoms of infection are—pain, redness, and watering of the eye, with dislike of the light. If there should be any pus or matter the case is serious, and medical advice should be sought without delay. Treatment should always be begun at once, the eye should be bathed frequently with the boracic solution, and light excluded by means of a brown-paper shade. If the child is likely to rub the eye a wad of cotton wool soaked in boracic solution may be bandaged over it.

The glare of strong sunlight, especially during travelling, is exceedingly trying and may cause eye-strain. Dark glasses may be worn by older children; the eyes of young children should be protected by drawn blinds or screens, and when taken out in their perambulators, the hood should always be ample enough to ensure complete shade from glare.

When a child begins to use his eyes for reading or fine work, he must be made to sit in such a position that the light comes from behind and over the left shoulder. It must be noticed if he has a tendency to hold the book too near or too far away from his eyes, or if there is any squint. When any one of these conditions exists the child's eyes should be examined by an experienced occulist, so that any error of vision may be corrected by glasses. Early attention may prevent much future trouble.

Care of the Ears.—Discharge from a child's ear is a sign that something is wrong. After an illness such as measles, influenza, or scarlet fever, there is liability to ear trouble. Pain or discharge should mean a visit to the doctor, so that any mischief, if present, may be detected at an early stage and future deafness prevented. It is unwise to syringe a discharging ear without explicit directions from the doctor, for much damage may quite unwittingly be done by an inexperienced person. The ear passage is separated from the very delicate and intricate mechanism of the organ of hearing by a membrane, the ear drum. When the membrane is ruptured, as may be the case when there is a discharge, syringing may be quite the wrong kind of treatment.

If a button, bead, or insect enters the ear, or if there should be an accumulation of wax, gentle syringing may be used. First pour from a warmed teaspoon a few drops of sweet oil into the ear, allow them to remain for a few minutes, then very gently syringe the ear with warm boracic solution. If the object does not come away, do not use force, and above all do not put any kind of instrument into the passage. The child must be taken to the doctor, who will remove the obstructing body without damage.

Nose and Throat.—The all-pervading dust of India and the tropics has an irritating effect on the delicate cellular lining of the nose and throat, and some children are very subject to colds in the head and sore throats, especially during the season of dust and sand storms. With older children gargling should be a daily habit, and when epidemics of influenza, septic throats, etc. are prevalent a simple gargle of alum, chlorine, or salt solution should be available and frequently used.

Mouth breathing is dangerous and should be prevented. From the first days of a child's life it should be made to form the habit of nose breathing. One of the commonest causes of adenoids and enlarged tonsils is mouth breathing in early infancy. It is easy by altering the position of a sleeping child and gently closing its mouth to make it breathe properly. When awake, each time the mouth is seen to be hanging open, it should be closed by raising the chin. The muscles will soon learn to react to this stimulus, the mouth will be kept shut, and the habit of nose breathing acquired.

When the child has a cold and the nose is blocked by discharge, gentle syringing with a weak boracic or salt solution will give relief. Persistent breathing through the mouth should receive medical attention.

If any small object becomes impacted in a child's nose the opposite nostril may be closed with a finger and the child made to sniff downwards. When this is not effectual in removing the obstruction, gentle syringing through the opposite nostril may be tried. This may have the result of sweeping out the object through the orifice by which it entered. No force must be used, and if the attempt is not successful the child must be taken to a doctor.

The Teeth.—Care of the teeth is important in the tropics where decay may set in suddenly and advance very rapidly. A periodical inspection should be made and advantage taken of a visit to a station in which there is a dentist, to have the teeth overhauled. The first set of teeth should not be allowed to decay without treatment. Their presence in good condition, till they are replaced by the second teeth, is necessary, both for good digestion and preservation of the shape of the jaw.

Regular cleaning of the teeth should be insisted upon, and excessive sweet eating not allowed. The childish love of sweets is no doubt a natural instinct, but if over-stimulated it becomes an abnormal craving. One or two sweets given daily as a treat after a meal, when the child is not hungry, will give far more satisfaction and pleasure than would be obtained from an unlimited supply accessible at will. Visitors should be discouraged from presenting the children with boxes of sweets ; if they do so the sweets should be kept in reserve by the mother or nurse, and the periodical selection of sweets by the children made into an eagerly anticipated ceremony.

A child's teeth are meant for use, and as soon as they appear crusts, crisp toast, and hard biscuits should be given. They will not develop properly when they have not enough work to do, as is the case when the food is soft and pappy.

Glands.—Nature has provided our bodies with a set of organs called lymphatic glands, which are small collections of soft tissue stationed at intervals along the course of the chief blood vessels. One of their duties is to act as a barrier against invasion of the body by germs which, having entered through some unguarded opening, are liable to cause abscesses or other infections resulting in illness.

In intercepting these germs and in other ways helping in their destruction, the glands become enlarged and nodular, and in some situations, such as the neck, armpits, groins, etc., may be felt and even seen, though in normal health they are imperceptible to touch or sight. Tonsils are collections of lymphatic tissue, so are adenoids. If a chain of small nodules is felt running down the neck when it is gently pressed with the finger-tips, it is a sign that there is infection of some kind present in the head, throat, or teeth.

The Skin.—The moist heat which is so trying in many parts of India and the tropics causes profuse sweating which, in some people, gives rise to a condition known as prickly heat. The burning and itching is very troublesome, especially to delicate children, and rubbing and scratching which are irresistible may result in boils and other skin infections. The rash appears all over the body, especially in the parts covered by clothing. It consists of innumerable closely set little papules or grain-like elevations, which may be slightly red or glazed. This rash comes and goes. Any hot drink, exposure to the sun, or warm clothes may bring on an attack with its unbearable irritation.

Anything which causes excessive perspiration should be avoided. Hot fluids should not be given, and the child should not be allowed to drink too much. Baths should be neither cold nor too hot; soap should not be used when prickly heat is present. After the bath the body should be carefully dried, and a simple dusting powder applied, especially between the folds of skin. A good dusting powder consists of equal parts of zinc oxide, boracic powder, and starch.

At night the bedclothes should not be too heavy. The best bed covering for a child, during the hot weather, is the half of a thin Kashmir shawl, which is extremely light and serves as a protection. Mattress and pillow should be firm.

Dry winds may cause roughness of the skin; a simple toilet cream such as lanoline or hazeline snow, used before exposure, may prevent soreness of the face and limbs and troublesome cracks of the lips.

CHAPTER X

INFANTILE MALADIES

Constipation.—Constipation in a child is a common ailment and is troublesome to treat. It may arise from faulty training, errors in diet or weakness of the muscular walls of the intestine, which by their contraction should force the undigested food down through the rectum to the external opening or anus. In a few cases habitual constipation may be due to accident or deformity.

It is impossible to be too emphatic about the importance of the formation of good habits, from the very first day of a child's life. Lack of care in this respect may cause lifelong trouble. The youngest child should be regularly held out over a chamber once or twice a day just after a feed, at stated times, and encouraged to pass a motion. The habit is quickly formed, and once formed should not be broken. Older children should have their bowels opened after breakfast, when the intestines have been stimulated to contraction by the food taken in.

A deficiency of fat in the food is sometimes the cause of constipation. This is often found in bottle-fed babies; the addition of cream to the diet, or in the case of older children butter, may relieve the trouble. Too much starchy food or an excess of milk are other causes.

Even very young babies may derive benefit from the giving of fruit juice and broth, older children may have the pulp of cooked fruit, while a child who has cut his teeth may be allowed a variety of fruit and vegetables. Exercise is very necessary from the first. The baby should be encouraged to develop his abdominal and other muscles by being allowed every opportunity of kicking and squirming, free and untrammelled by clothes.

Children who are given a well-balanced diet, containing all the constituents required for the building up of their tissues and the supply of energy in proper proportions, will rarely be troubled with constipation, if they take regular exercise in the fresh air.

Castor oil, though it is a valuable drug in its proper place, should not be used in the treatment of habitual constipation. Milk of magnesia, syrup of figs, cascara sagrada, or liquid paraffin may be given at times, but diet and exercise are the essentials in treatment.

Indigestion.—Simple indigestion may be chronic or acute. If chronic it points to some persistent error in feeding or to some stomach defect. The former can be easily remedied by alteration of the diet, the latter is a matter for treatment by the doctor. Wrong feeding will naturally cause the stomach to revolt. An indigestible meal will be got rid of by an attack of vomiting or diarrhœa; continual wrong feeding will give rise to chronic indigestion.

Over-eating, indigestible food, excessive heat, or a chill may result in vomiting and pain, with or without diarrhœa. As a rule the attack subsides as soon as the cause has been removed. If the sickness has been occasioned by too much or by improper food, the best remedy is a dose of castor oil or grey powder. The child should be put to bed and allowed no solid food till the vomiting has ceased, as it usually will in a day or two. Soda-water with milk may be given. If the child is obviously ill and the attack continues, the doctor should be consulted without delay.

Simple Diarrhœa.—This is usually an attempt by Nature to get rid of improper food, or it may be due to a chill. Rest in bed, warmth to the abdomen, and an aperient such as castor oil to help Nature in her efforts, will generally effect a speedy cure. Until the diarrhœa ceases milk should be the only food. If the diarrhœa persists and is accompanied by high fever, the stools containing blood and mucus (a transparent jelly-like material), the doctor should be called in.

Chronic Diarrhœa.—Diarrhœa should never be allowed to continue without treatment. There is a species of early morning diarrhœa, called hill diarrhœa, to which people, out of condition, are liable when they first go up to the hills. Children, with their delicate organizations, are liable to chills, which may be followed by an attack of diarrhœa. In hill diarrhœa there is a good deal of wind, the abdomen becomes distended, and the bowels are opened several times in the early morning, the stools being pale in colour, frothy, and liquid. To prevent an attack, plain and light diet should be given, the child should not be allowed to over-eat, and should be warmly clad. The change to the bracing air of the hills may cause a child to be excessively hungry, so discretion must be exercised as to the amount of food permitted. An occasional dose of salts is valuable as a preventive. The condition may continue till the return to the plains, but usually it lasts for a few days only.

Chills.—*In the tropics to get a chill is no uncommon* experience. The sudden transition from the great heat of the plains to the comparative cold of a hill station, the current of air from an electric fan or punkah, the drenching rains or damp clothing incidental to the monsoon may lead to a chill, which may pass off without ill effects or may be the beginning of a serious illness. The effect of a chill is to lower the vitality of the body, so that it is liable to fall an easy prey to the poisonous micro-organisms which everywhere abound. A chill therefore is not to be regarded lightly; it should if possible be prevented; failing this, it should be treated at once.

Precautions.—Warm clothing should be available for the journey up to the hill station, and changes should be at hand on arrival. Thick shoes are necessary for walking in the woods, and damp clothes must be removed on return. A warm wrap should be worn when active exercise has been taken and perspiration is profuse. Cold baths are dangerous if taken when heated. Fans or punkahs must not play directly over the body. The difficulties of airing and drying clothes during the rains must not be allowed to interfere with the provision of dry garments and bedding. For night journeys during the cold weather, an abundance of warm wraps and blankets are required.

Treatment.--When a chill has been taken, bed with hot bottles and hot drinks are indicated. A watch should be kept on the temperature, for the chill may be the beginning of an attack of malaria or other fever, and these need special treatment.

Coughs and Colds.—These are more or less preventable. They are caused by chill or infection by germs, which is most likely to occur when the body is over-fatigued and there is a lack of vitality or resisting power. A child in good condition who has an abundance of fresh air, and is warmly but not too warmly clothed, is not likely to be subject to colds. Exposure to sudden changes of temperature, sitting in a draught or under a fan when perspiring after exercise, or close contact with any one suffering from a bad cold, may result in infection to the strongest.

Treatment.—A cold once developed must not be neglected. The child should be put to bed for a day or two, or if this is not possible, kept in a warm but well-ventilated room. The bowels should be kept freely open. The food should be light and nourishing. The chest may be rubbed with camphorated oil. and a simple soothing cough mixture given.

Bronchitis.—An attack of bronchitis is often the result of a neglected cold. There is usually a rise of temperature, which may be anything from 99 to 103 degrees. The cough is hard and dry. In simple bronchitis the breathing is not hurried.

Treatment.—Bronchitis needs care as it may develop into pneumonia, all forms of which are very serious in children. The child should be put to bed in a warm and airy room, and kept in bed till the condition is relieved and the temperature is normal. A doctor should be called in if available, otherwise careful nursing and avoidance of chill will in most cases be successful in effecting a cure.

Pneumonia.—This may occur as an extension of bronchitis or as a complication of one of the acute infectious illnesses. Pneumonia is a dangerous illness and needs all available skill and care. When a sick child, with or without a cough, has a temperature and a sudden increase in the respiration is noted, the doctor should at once be called in. In broncho-pneumonia the breathing is very characteristic; it is quick and shallow, and each breath is drawn in with a catch or grunt. The child may complain of a pain in the stomach. If there is a cough in the early stages it is hard and dry.

Treatment.—Nursing is of the greatest importance, the bowels should be kept open, and the diet should be liquid and as nourishing as possible. As in other illnesses in which the lungs are affected, the most careful attention should be paid to the condition of the chest during and after convalescence, and if the general health is not satisfactory, the child should be thoroughly examined by a doctor. The persistence of a cough, however slight, any periodical rise of temperature, or the failure of the child to gain weight and strength, should be regarded as being of serious import and must not be neglected.

Tuberculosis.—A few words about tuberculosis may not be out of place. It is one of the commonest germ-caused diseases, and it may affect the lungs, the bones, the glands, and the brain. Though tuberculosis is not inherited, a child may inherit a predisposition to it. There is a condition of poor development and low vitality in which the germs of tuberculosis can easily gain hold in the lungs or other organs of the body and there flourish. When a child is thin, narrow chested, and of poor physique generally, the greatest care is needed. Every effort should be made to increase the powers of resistance. An abundance of fresh air, regular exercise, nutritious but plain food with a generous allowance of fat in some acceptable form, are necessary. The child should be taught to expand its chest and to breathe deeply. The nose and throat should be kept in good condition. Enlarged tonsils and adenoids should not be allowed to develop.

When a child is obviously not doing well and is thin and anæmic with a variable appetite, an examination of the chest is advisable, whether the child has a cough or not. Treatment should be given at an early stage, before the ominous daily rise of temperature appears. Pains in the limbs or joints, any swelling of arm or leg, pain in the back or enlarged glands should receive immediate attention.

Tropical districts, except those of high altitude, are not good for those suffering from phthisis or tuberculosis of the lungs.

Croup.—Croup is a condition characterized by spasmodic attacks of difficult breathing. There are several different varieties of croup; two of them—simple croup and spasmodic laryngitis—are largely of nervous origin and are rarely fatal, though alarming when a child is seen in an attack for the first time. The third variety, diphtheritic croup, is a very serious illness which may end fatally and needs immediate skilled treatment and careful nursing.

Simple Croup or Child Crowing.—An attack of simple croup may come on at any time of the day or night. There is no cough and no fever. The child holds its breath, struggles, becomes red in the face, then suddenly a deep breath is taken with a kind of crowing sound. Several attacks may occur during the day. Children subject to croup are generally under eighteen months of age and are often rickety and teething. These attacks happen sometimes when the child has been crossed or scolded, and are only dangerous when they are accompanied by convulsions.

Treatment.—The gums should be lanced if necessary, the bowels must be kept open, and the diet simple and light. During an attack the child may be put into a warm bath and his chest sponged with cold water for a minute or two, or, if the attack is severe, cold water may be dashed in the face.

Spasmodic Laryngitis. — This occurs chiefly in children from two to seven years of age. It comes on, usually in the night, with slight fever and a cold in the nose and throat. There is a metallic cough, difficult breathing, and hoarseness of voice. In a spasm the face becomes blue and congested. This condition only lasts for a few minutes, and the child falls asleep in an hour or so. Convulsions are rare. The child generally awakes in the morning feeling quite well. The attacks may be repeated for several nights running.

Treatment.—During an attack a dose of ipecacuanha wine may be given. The dose for a child of a year is two drops repeated every quarter of an hour while the attack lasts. As a preventive, care should be taken to avoid damp and cold, and the child's general health should be attended to. Simple digestible food and plenty of fresh air are necessary. If enlarged tonsils or adenoids are present they should be removed.

Diphtheritic Croup.—This very dangerous condition may occur at any age. It begins with hoarseness and a croupy cough which suddenly becomes worse, often during the night. Breathing is very difficult, and if the throat is looked at, a greyish membrane will be seen covering it. The pulse is quick, and there is a little temperature ; the lips and finger-tips are blue.

Treatment.—Medical help should be obtained at once. While awaiting the doctor, the child should lie in bed in a room at a temperature of 68 degrees if possible. A kettle should be kept boiling in such a position that the air which the child breathes may be moistened with the steam. Hot poultices may be applied to the chest. Liquid food such as milk, strong clear soup or broth, barley and plain boiled water should be given. The child will require plenty of liquid. The bowels should be kept open. Diphtheria anti-toxin is the best treatment, and no time should be lost in giving the injection.

Fits or Convulsion.—These occur in many children, but are often due to some temporary and removable cause, and as a rule there is no tendency to recurrence. Occasionally convulsions or fits are due to more serious and permanent causes; and then special treatment is necessary.

Among the common causes of convulsions in children are weakness arising from poor digestion, teething, indigestible food, overloading the stomach, worms, and rickets. Some acute fevers such as measles, scarlet fever, and pneumonia begin with a convulsion. Other serious conditions such as meningitis, paralysis, etc., may begin and be accompanied by fits. In young babies, if convulsions are frequent and lasting, they may be due to injury at birth.

Convulsions generally come on suddenly, though they may be preceded by restlessness. The hands begin to twitch and the eyes are staring or rolled up so that only the whites are seen. The breath is held and the face becomes red. Then twitchings of the hands, arms, and legs begin. The head is held stiffly back. The convulsion subsides gradually, and the child sleeps or passes into a stupor. The convulsion is usually single if due to a simple cause such as indigestion, but it may be repeated where the cause is more permanent. In rickets the spasms are confined to the hands and feet and the child becomes rigid. If the spasms are limited to one side of the body and limbs, when the attack is over careful note must be taken of the condition of the limbs of that side; if weak or useless, the case is probably one of infantile paralysis, and will require the best of medical treatment.

Treatment.—The child should at once be put in a warm bath, and if there is fever, a cloth wrung out of cold water applied to the head. The bath should not be too hot.

The cause must be removed if possible. If indigestible food has been taken an emetic such as ipecacuanha wine must be given, and this should be followed by an aperient such as castor oil.

The health should receive attention. If the child is rickety the food should be carefully chosen and the deficiency in fat, fruit, juice, etc., made good.

St. Vitus's Dance or Chorea.—This occurs in older children, generally those of a nervous constitution or rheumatic tendency. Chorea may be started by a fright or over-work at school; the child is always in poor condition and anæmic.

The beginning is gradual, and the existence of chorea is often unnoticed for some time. The child is restless and fidgety, irritable, is clumsy, and drops things. There may be pains in the limbs. Then twitchings of the face, jerky movements of the hands or arms come on, and if the condition becomes more severe, these are intensified, so that the child may be unable to feed herself.

It is important to recognize the condition at an early stage, as there is some connection between this and heart disease, which not uncommonly is found in children who have suffered from chorea.

Treatment.—In most cases the patient recovers in a few weeks or months if the general health is carefully attended to. Rest in bed is necessary, with absolute quiet and freedom from excitement. Good nourishing food and fresh air are required. A careful overhauling by the doctor should not be omitted.

Heat Stroke.—This may be occasioned by direct exposure to the sun or by high temperature, with fatigue, overcrowding, or unsuitable clothing. Heat stroke may occur at any age.

The symptoms may come on suddenly with restlessness or delirium going on to unconsciousness, and very high fever. Or there may be a preliminary stage with headache, giddiness, sickness, absence of perspiration, pains in the limbs, drowsiness, and thirst; occasionally there is diarrhœa. Malaria and other acute fevers in children may resemble heat stroke in the symptoms. If malaria is suspected quinine should be given at once.

Treatment.—The patient should be wrapped in a wet sheet, placed in a current of air or under a fan, and the sheet kept wet with water as cold as possible until the temperature has fallen to 102 degrees. When this happens he should be wrapped in a dry blanket. Hot coffee or other harmless stimulant, or hot milk may now be given to guard against collapse. Copious perspiration is a good sign.

A doctor should be sent for without delay.

With children in the tropics, at all times the greatest care should be taken to avoid such a calamity as a heat stroke. Children must always be provided with adequate protection from the sun's rays, and they should not be allowed out of doors after the sun is above the horizon, even in cold weather, without sun hat or topee and umbrella. The topee should be of material sufficiently substantial to ensure safety and of a shape to protect the nape of the neck. No child should ever be permitted to run the very serious risk of spending a hot season, or any portion of it, in the plains of a tropical country. However careful a mother may be, it is quite impossible for her to provide conditions which will make it safe for a child to stand without injury the very high temperatures which prevail.

CHAPTER XI

THE CHILD AND ITS NERVES

FROM the point of view of their mental equipment children have been divided into four classes: the normal, sub-normal, super-normal, and the nervous.

The Normal Child.—If by a normal child is meant one who strictly conforms to the rules laid down by specialists in health, feeding, and education, such a child is rather a rare specimen. Even average children differ delightfully in character and temperament, as well as in physical characteristics; no two are alike, and the physician and teacher agree with the mother that each child requires special study and management. Rules and regulations must be adjusted accordingly.

The Sub-Normal Child.—There are, however, children who differ widely from the normal, and amongst them is a class that may be described as sub-normal. These, while possessing the faculties of sight, hearing, and speech, fall definitely below the standard of intelligence reached by other children of similar age. They walk and talk late, are often lethargic, their mental faculties are sluggish, and they do not take that keen interest in their surroundings which is natural to children. In other cases of a different type the children are apt to acquire bad habits, and those of cleanliness are difficult to learn, while their moral sense is undeveloped. In extreme cases there is an obvious lack of intelligence.

There may be an adequate and easily remedied cause for simple backwardness. In some families the children are apt to develop late. The child may have been ailing, or may have become rickety in consequence of injudicious feeding, so that his progress is hindered. An only child may miss the stimulating influence of other children, and the nurse may not have the requisite sympathy and understanding to take her part in the awakening of the child's faculties.

If a child is constantly left in the care of an ayah without due supervision and is habitually sleepy, lethargic, or dull, the possibility of its having been dosed with opium must be considered. Such things have happened—still are happening in India. Opium is a drug in general use, many Indian mothers give it to their children, who become accustomed to its use: *only*, occasionally the child receives an over-dose, with tragic results. Some ayahs habitually give their charges a little opium, it may be, in all good faith, believing it to be good for them. Others, however, knowing it to be forbidden, surreptitiously put opium inside the baby's thumb or finger-nail, so that through sucking it he may become quiet and peaceful. There have also been some sad cases in which a baby has been deliberately poisoned by an ayah, out of revenge for some severity or fancied injustice—this, too, when the ayah has apparently been devoted to her charge.

In older children the existence of adenoids may have a retarding influence on the mental development, and their removal may result in a striking improvement.

Other causes of backwardness are injury at birth, the effects of which have only become visible later ; or a fall, injury to the head, or some natural defect in the brain.

In any case, if a child is backward and apparently below the normal in intelligence and there is no obvious and easily removable cause for this, a doctor who specializes in children should be consulted. A great deal may be done by proper treatment and suitable surroundings to direct the child's development along the right channels. Backward and dull children often have some talent, which if cultivated may help to compensate for other deficiencies. Specially trained teachers undertake the education of these sub-normal children with very marked success, and the earlier the child is confided to the care of such a teacher, the better chance there is of obtaining satisfactory results.

Super-Normal Children.—A child may develop early and appear to be more intelligent than ordinary. This is most satisfactory to his parents, and they are justified in their joy and pride as long as the child is healthy, sleeps well, eats well, and is not unduly irritable. Forwardness, however, may not be evidence of future greatness ; for in the majority of cases this period of premature mental activity is followed by one of slow mental growth in which apparently but little progress is made.

If the child who is mentally in advance of his age is also highly strung and nervous, thin and of poor physique, sleeping and taking his food badly, he will require very careful treatment. Sleep, fresh air, and nourishing and tempting food are imperative, with a judicious holding back of his mental growth rather than urging forward. The super-normal child should not begin regular lessons too early; it must be remembered that he is acquiring knowledge all the time; his active mind is working continually, and his insatiable curiosity, having no bounds, should be wisely directed. As a rule, the companionship of children of his own age is preferable to that of older people, and he should not be incited to show off by reciting, acting, and other public displays. The charge and training of an abnormally intelligent child is a serious responsibility, as the quality of future achievements will largely depend on wise guidance during the early years of his life.

The Nervous Child.—A nervous child may be above or below the average in intelligence. The nervous system of a child, which is always specially susceptible to stimulation during the period of rapid growth, is in some children more than ordinarily sensitive, and a small stimulus may produce a disproportionate effect. This is evidenced by such symptoms as irritability of temper, an excessive display of emotions, such as rage or even affection, night terrors, screaming fits, fear of the dark, of strangers or of animals, lack of control over the bladder especially at night-time, bad habits, twitchings, etc. Nervous susceptibility may manifest itself in very many different ways, all requiring careful management.

A child may be nervous from birth, but when in a normal child some or any of these symptoms appear suddenly, there is always a definite mental or physical cause, such as shock, fright, accident, or unsuitable surroundings. The cause should be ascertained, removed if possible, and the child treated without loss of time. Habits are very easily formed in children, and every outburst or manifestation of nervous irritability only increases the liability to other attacks; cause and effect act and react, and may result in the formation of what is termed a "vicious circle" which is more quickly formed than broken.

It is not always realized that heredity is a most important factor in the production of a nervous temperament. Children who inherit from either parent a tendency to nerve trouble are prone to develop nervous symptoms from slightly exciting causes which, in ordinary children, would have only a transitory effect. The way in which highly strung children are brought up frequently tends to aggravate the condition. It may happen that one or other or even both of the parents may be temperamentally most unsuitable to be constantly with him. Intense affection, especially if accompanied by emotional outbursts, may have an injurious effect, and an atmosphere of irritation or of friction between the parents may be most harmful to the child.

A sensitive and nervous child should be with calm, self-controlled people, who by their very personality exert a soothing effect. The nurse in charge should be sympathetic, but firm, and should possess the confidence and affection of the child; harshness and severity will only increase the mischief. Much patience will be needed in correcting bad habits and replacing them by good ones, as well as in the teaching of self-control. The general health should receive attention; fresh air and an outdoor life are essential. The child should live, as it were, the life of a vegetable until nervous stability is re-established. Naturally he should not be allowed to suffer from boredom, but his mind should not be over-stimulated, especially towards evening. Complete change of surroundings and sometimes of people is often the most successful means of cure. A child in the tropics who is born with a nervous temperament or develops nervous symptoms is not likely to do well there, and should be sent home at an early age.

Bad Habits.—Amongst the bad habits which neurotic, injudiciously brought up, or sub-normal children are apt to contract, are thumb sucking, dummy sucking, nail biting, bed wetting or enuresis, dirt eating, and masturbation.

Thumb Sucking.—In quite young babies sucking the thumb, fingers, or fist may be a sign of hunger, older children acquire the habit while teething. It is an objectionable habit, and may be injurious to the child in several ways, for he may pick up infection from dirty hands, or constant sucking may result in deformities of the jaw, such as prominent front upper teeth, as well as in the growth of adenoids. If the nurse patiently removes the fingers from the mouth each time as soon as the habit is noticed, it will be easily broken. When of long continuance the difficulty is greater and, if persistent, a folded newspaper may be lightly bandaged round the bend of the elbow, allowing freedom of movement to the arms but prevention of access to the mouth.

Dummy or Comforter Sucking.—In no case should this be allowed. The remedy lies with the mother, who must never permit the nurse or ayah to put anything of the kind in the child's mouth. It is curious how very resentful a small baby can be when deprived of his accustomed "comforter." He usually protests with rage and tears; but these should be sternly disregarded.

Nail Biting.—This habit is sometimes acquired by older children, mostly those of a nervous temperament, when out of sorts, dyspeptic, or in the early stages of chorea or St. Vitus's Dance. The general health should be attended to, and the child constantly reminded of the habit. The fingers may be smeared with bitter aloes or other bad-tasting drug, as a preventive. The elbows may be bandaged or gloves tied on at night-time.

Enuresis.—Enuresis or bed-wetting may arise from several different causes, some simple and easily remedied, others more serious, requiring medical treatment.

Well-trained babies pass water automatically at regular periods when held out or placed on a chamber. A child of two and a half years should have acquired control over the bladder at night if taken up late in the evening. A child over three years of age who persistently wets the bed is abnormal, and there must be some real reason for the habit. If the child is merely indifferent or lazy, punishment may be of use, but in most cases it is not effective, stimulation by praise or reward being more successful.

Fluids should be given in the earlier part of the day, in the form of milk and water—no tea or coffee should be allowed. After four o'clock no fluid should be taken, the last meal being dry or semi-solid and unstimulating. At ten o'clock the child should be taken up regularly to pass water. The general condition of the child should be attended to, fresh air and regular exercise are important.

The doctor should be consulted if simple measures are unsuccessful. The condition may be due to the presence of adenoids, irritation from worms, the kidneys and bladder may be at fault, or other reasons for the habit may exist, and medical examination of the child will probably reveal the cause of the trouble, which must be cured at an early stage.

Dirt Eating.—The unpleasant habit of dirt eating is acquired by some neurotic children, others take to nibbling their doll's plaster legs, or chalk in any form available. This habit is especially dangerous in India or other tropical countries where the soil is frequently contaminated by micro-organisms, ova of worms, etc. Mild punishment is generally successful in the prevention of this habit. Its presence indicates usually that there is something wrong in the diet of the child, and this should be rectified.

Masturbation.—This is one of the most serious of bad habits which are acquired by children. Its unconscious object is stimulation of the very sensitive external genital organs, either male or female; this is attained by fingering, rubbing, or playing with them, by rubbing the thighs together, or by sitting on the floor crossing the thighs and rocking backwards and forwards. Masturbation is a dangerous habit, easily acquired and very persistent. It is not confined to young children or to one sex. Its continuance may do real harm, which may affect the after life of the child, and it must at all costs be prevented. The tendency may have its origin in some local irritation, which must be got rid of, so medical advice should be obtained at once and the child examined. He should be watched before going to sleep at night and in the early morning, for at these times the child is most likely to indulge in the practice; and constant vigilance and patience must be exercised until the habit has been discontinued.

CHAPTER XII

THE NURSE AND THE NURSERY

India

The choosing of a child's nurse is no easy matter. A well-recommended, experienced English nanny is perhaps the best solution of the difficulty, especially where the husband's official position demands a good deal of entertaining and the time of his wife, if she is a helpmeet to him, is very fully occupied. In such cases she is not able to exercise the constant supervision required by a less competent nurse. Good English nannies are in great request, and when disengaged are eagerly snapped up by friends of their former employer. A really capable woman is often autocratic in her methods and may resent interference, but tact and understanding will work wonders. The knowledge that her children are in good hands during unavoidable absences is a great comfort to a mother.

A trained child's nurse is perhaps the next best thing, especially one with some previous Indian experience. There is risk in taking out a young untried girl; as she may not be able to stand the climate or adapt herself to new conditions. It is not a rare occurrence for a girl to announce suddenly her intention of leaving to get married, or even to accept another engagement where she is to receive a larger salary or have a better time—this in spite of having signed an agreement to remain for a definite period. Unfortunately only the few appear to regard agreements as binding, but a kind considerate mistress who pays a fair salary is seldom badly treated. It must be remembered that there are obligations on both sides, and a young girl has just as much right to have what she considers a good time, as her mistress has to enjoy herself. Girls far away from home and country are often desperately homesick, and in a small station the life of the nurse and nursery governess may be a very lonely one. Naturally a great deal will depend on the point of view of the mistress as well as on the personality of the girl.

A girl born and bred in India, and brought up in an institution or orphanage, may make a very satisfactory nurse, if well supervised. Some of these are of pure English extraction and some are of mixed parentage. To both the objection of accent applies, for the Eurasian accent is very infectious and small children quickly adopt it. This may seem to be a minor point, but it should be taken into consideration. These Indian-born girls are usually very good with children, readily learn to adapt themselves to their surroundings, and carry out instructions willingly. The difficulty of social life is greater with them than with European-bred girls; in the large stations they are likely to find friends of their own class, in the mofussil they are more isolated.

The Indian ayah has many good points; she surrounds her charges with an atmosphere of love and devotion and has infinite patience. They make a charming picture—the fair-haired English child and the swarthy-faced ayah with her voluminous white draperies, tinkling silver bangles, and gay scarlet coat, as she sits soothing him with magnetic touch, crooning an old-world lullaby. Taking into consideration her home surroundings, her entire lack of training in European customs. and the great difference of her outlook on life, it is wonderful that she is as satisfactory as she is found to be, but too much should not be expected of her. Her standard of truth and sincerity is as much her own and differs from ours as much as her standard of personal cleanliness. The training in obedience, straightforwardness, and self-control, so essential to a child in the earliest years of life, is not to be obtained from her. Consequently the responsibility of the mother or of the European nurse is all the greater. An Indian ayah is almost indispensable in India; it is physically impossible for mother or nurse to be with the children all the time and to do all that is necessary for them.

The best ayahs are Madrasis, who understand and speak English. Other ayahs may be Christian or Mahommedan, and sometimes Hindu. They all talk to the children in their own language, so children left much with ayahs and the other servants learn to speak Hindustani earlier and more fluently than their mother tongue. It is not uncommon on board ship to come across children who literally have to learn English during the voyage, while their tongues wag merrily in Hindustani. It is fortunate that most mothers do not neglect their children to this extent, for in leaving them to pass the main portion of the day in the companionship of ayah and bearer, they are losing an opportunity of character-formation which can never come again. The plastic young minds are receiving impressions which are indelible. The Indians themselves live very near to nature, and the events of birth, marriage, and death, as well as the primitive emotions, are discussed openly and without reticence. Children see and hear things which perhaps at the time may appear to make little or no impression, but may have a far-reaching influence on character and temperament.

The Nursery.—The nursery should be the happiest and most cheerful corner in the house. The most suitable set of rooms having been selected and put in good repair, the walls should be freshly distempered some soft pale shade of colour. The rooms should not be crowded, only the necessary articles of furniture being allowed and superfluous drapery dispensed with. Almirahs or cupboards of good insect and dust-proof wood for clothes, a medicine and first-aid cupboard fixed out of reach of the children, a good firm screen filled in with washable material, chairs, tables, beds, and other indispensable articles, should all be strong and not flimsy or rickety. The beds for the children should be light and portable, so that they can easily be taken out on to the verandah, and the baby should have a folding cot available for travelling. All the beds should have mosquito curtains of ample size, so that they may be well tucked in. Punkahs are not necessary in the cold weather, but it is well to have one in readiness, so that it can be easily fixed in case of illness or unavoidable delay in going up to the hills at the onset of the hot weather.

It is useful to have an ice chest in which the sealed bottles of sterilized milk, and other articles of food or drink, can be kept cool. Ice should never be put directly into the cup or glass, but the receptacle containing the liquid may be cooled in the chest. A wire safe, which can be raised or lowered at will, should be suspended from the roof in a draught of air. This will serve as a larder.

Where oil is used for illuminating purposes, a good strong safety lamp which cannot be overturned should be provided. For cooking purposes one of the modern blue-flame oil stoves will be found to be most efficient and cleanly.

For a young child a baby carriage is indispensable. It should not be too elaborate, as it may be subjected to rough usage in travelling, but it should be strong and comfortable with good springs, for in the hills many of the roads are very bad.

CHAPTER XIII

DURATION OF STAY IN THE TROPICS

India

The objections to bringing up and educating children in India are largely based on reasons of climate, but of equal importance are the domestic and social conditions of life.

European children who are resident in the north during the cold weather, go to the hills for the summer, and like those who live in a hill station all the year round, are healthy and well grown, for the bracing cold of Northern India is an admirable tonic. The short and mild winter of places further south has no stimulating properties, and the children living in them are very white-faced little beings when they first arrive at the hill station in the spring. Consequently, parents living in northern stations are justified in keeping their children with them in India for a longer period than those living in the south, provided always that they are able to provide suitable domestic surroundings and educational facilities.

Stress must be placed on the character of the home environment, for children left to the care and companionship of native servants run a serious risk of acquiring bad habits, of becoming unmannerly, and of developing in undesirable ways. Indians almost always love European children and are extremely indulgent to them. Children are as a rule happy with their ayah and bearer, who are wonderfully good at amusing and interesting them. Their animal stories and their tales of gods, demons, and ghosts are fascinating and often blood-curdling. Their gossip about the doings of their sahibs and mem-sahibs, and their discussion of all kinds of unsuitable topics, however, are not conducive to the moral welfare of the children.

It is only in rare cases that the mother herself, who is necessarily occupied with social duties, can give enough time to her children to create for them a suitable atmosphere, in which they can develop in the right way and keep the naturalness of childhood. The typical Anglo-Indian children, precocious and self-possessed, are the product of an artificial life spent with their elders, listening to and often joining in conversations most unsuitable to their years.

It is another matter when the children are in charge of a judicious English nurse or governess who realizes the importance of education in obedience, self-control, self-dependence, and truthfulness, who teaches them courtesy and consideration towards servants, and habits of orderliness and system.

English children in India may suffer from too great isolation, often being completely cut off from the society of children of their own age and condition; or, as is likely to be the case in the hills during the hot weather, they may have more social life than is good for them. The innumerable parties, dances, and elaborate entertainments for children, which are a striking feature of fashionable hill stations, make the children blasé and dissatisfied with simple pleasures; and they become over-tired and over-excited. Further, they are apt to acquire infectious diseases, which are always prevalent in centres occupied by a floating population of children coming from all parts of the country. No doubt the companionship of other children is good, especially in the case of an only child. Most children love acting, dancing, and singing, all of which are natural and healthy instincts, very strongly developed in some. There should, however, be strict moderation in the number of social functions which a child is allowed to attend, especially in the case of nervous and excitable children, who should not be permittted to act, dance, or sing in public. Only exceptionally should a young child take part in any performance outside the nursery.

There is no doubt that children can be brought up healthily in some parts of India, but it is doubtful if the hot-house atmosphere of social life is anything but injurious to them. Taking all things into consideration children between the ages of six and eighteen, except in the rarest of cases, are better at home. When the greater part of the year is spent in the enervating south they should not remain in India after they are four years of age, and when a child does not thrive the advisability of taking him home earlier has often to be debated. As a matter of fact, no rule can be laid down, each case must be judged on its own merits; the climate, the constitution of the child, and the domestic conditions have all to be taken into consideration.

Education.—In families blessed with a competent governess the education of children is ensured until they are of an age to go home. Where the mother is not so fortunate, some provision must be made for the very simple education such children are likely to need. The mother herself may be able to undertake the task, a daily nursery governess may perhaps be obtained in a large station, or some other resident, who has a good governess, may be willing to share the lessons of her own children with others. Music lessons and dancing classes are available in most stations of any size.

In special cases in which it is considered necessary to keep them in India, older girls may be sent either as day girls or as boarders to one of the hill-station schools in which a good ordinary education is to be obtained. It is, for many reasons, most unwise to keep boys out in India after they have attained the age of five or six years.

The Tropical Colonies

In a good climate with moderate temperature, children who lead a simple and healthy life continue to do well for a much longer period than those who live under the conditions which usually prevail in the tropics. A periodical bracing up in an invigorating and cold climate is, however, desirable in all cases;

unless this can be obtained, children should be sent home as soon as they become pale and anæmic.

Whether it is intended to make a permanent home in the colonies, or the stay is likely to be for a limited period, it is wise to send children home to be educated, even though it may be, in exceptional cases, possible to provide a good education on the spot. Most children need the stimulating companionship of their contemporaries, and, failing this, are apt to become narrow and limited, and, in later years, incapable of holding their own in the battle of life. They miss training in co-operation and the give-and-take of school and college life.

PART III.—TROPICAL DISEASES

CHAPTER XIV

INFECTION AND ITS CARRIERS

THE theory is gaining ground that most of the diseases dangerous to life and health in the tropics are caused by infection from micro-organisms rather than by climate. Places formerly most deadly to the white man have been transformed into healthy stations by means of modern sanitation and the extermination of those insect pests which have been proved to be carriers of disease-causing germs.

The importance of getting rid of such insects as flies, mosquitoes, bugs, ticks, pediculi or lice, and fleas cannot be too much emphasized.

House flies are carriers of the germs which cause diarrhœa, dysentery, enteric fever, cholera, and other bowel troubles. They pick up the infection from latrines or any place in which the stools of infected persons are found. Wherever they settle, they deposit the germs with their excreta, and food thus infected will, if eaten, cause disease.

Mosquitoes may carry the germs of malaria, filariasis or sleeping sickness (Africa), yellow fever (South America).

Bugs, which in some parts of India infect the houses and furniture, and are also picked up from the railway carriages when travelling, may cause kala azar.

Lice or pediculi may carry the germs of relapsing fever, typhus, and trench fever.

Ticks may carry the infection of African relapsing fever.

Fleas may carry germs, such as those of plague, and they may also carry the eggs of worms.

The tsetse fly of Africa carries the germs of sleeping sickness.

Other parasites which may infect man and cause special symptoms are the tape, round, thread, and guinea worms.

Precautions against Germ-carrying Insects, etc.—*Flies.*—All latrines and places where fæces are kept should be provided with fly-proof screens or covers to keep out flies, and should be periodically inspected.

Food should be kept in fly-proof safes and should never be left uncovered. Muslin or fine net covers, weighted with beads, should be used to protect food placed on the table, especially sugar, milk, jam, and other sweet things loved by flies.

The breeding-places of flies, such as stables, etc., should be kept clean and dry ; no rubbish heaps or dung should be allowed to stand anywhere in the compound.

Bugs.—When houses or furniture are once infested with bugs it is very difficult to free them from these loathsome insects. The rooms may be fumigated with sulphur, and petroleum emulsion may be used to paint into the crevices of beds and furniture. Petroleum emulsion may be made by dissolving ¼ oz. of soap in 3 tablespoonfuls of boiling water and adding this, while still warm, to ½ pint of petroleum.

Fleas.—Fleas may infest dogs, cats, mice, and rats. They breed in dust and dirt, and do not like exposure to sunlight, so cleanliness is the best preventive. Where fleas are prevalent, floors should be well cleansed and then washed over with carbolic solution. All rugs and carpets should regularly be taken outside, well shaken, and exposed to the sun. Dogs should be washed with carbolic soap. All rats and mice should be exterminated.

Fruit and Vegetables.—Uncooked fruit must not be eaten unless perfectly sound and ripe. It should have an intact skin which must be removed. Salads of raw vegetables should not be eaten, unless their origin and conditions of growth are known to be above suspicion. In any case all green stuff should be carefully looked over and washed with cold boiled water, or, better still, with water in which enough potassium permanganate has been added to give a pink tinge.

The Mosquito.—The mosquito is a gnat having two pairs of wings, only the front pair of which are developed. It has a proboscis or trunk which consists of a sharp stabbing apparatus for piercing the skin, a minute duct along which the poisonous secretion passes through the bite to the blood, and another larger tube through which blood is drawn up into the stomach of the mosquito. The antennæ or feelers of the female are covered with short downy hairs, those of the male with long silky ones.

The mosquito is found in the tropics and in those countries which have a cold winter and hot summer. The male mosquito lives on vegetables, but the female also sucks the blood of animals and man.

The eggs are laid in masses either on the surface of stagnant water or in damp places near to water. When the eggs are hatched, which may be in two or three days, or during the cold weather after a long period, the worm-like larvæ live on or near the surface, and having moulted several times, reach the pupa or nymph stage, and float on the water. After a day or two the pupa case bursts and a fully developed mosquito emerges, which settles on its discarded case to dry its wings and then flies away. Each female may lay many thousands of eggs during a season. During the cold weather some of the adult mosquitoes sleep in dark and out-of-the-way places; in the spring they revive, and the females are ready to begin laying their eggs again.

Mosquitoes bite most freely in the early evening or during the night. They do not like currents of moving air, nor do they fly high or for long distances. Water or moisture is necessary for their development.

Where the mosquito abounds it is very difficult to procure absolute protection from their bites. Certain precautions, however, can and should be taken. The dwelling-place should be high and dry, the neighbourhood of marshy land, collections of water, or native huts being avoided. No puddles or pools of water should be allowed to remain round wells, in drains, or anywhere in the compound. Broken crockery, empty tins, or anything which might contain water should never be left lying about. All wells should be covered with mosquito-proof wire netting, and should be frequently inspected. If mosquito larvæ are seen to be present in any cistern, tank, or collection of water, they should be destroyed by treatment with kerosene or petroleum. A few tablespoonfuls of this thrown on the surface once a week will render the water unsuitable for the mosquito, and any eggs or larvæ present will be destroyed.

Vegetation should not be allowed too near the house.

Every one should sleep under a mosquito net, especially those sleeping on the ground floor or out of doors. A punkah or electric fan is an additional protection against mosquitoes.

Human Carriers.—A person is said to be the carrier of a disease when, after having recovered from all symptoms, or after he has had the disease in such a mild form that its existence has not been detected, the germs are still present in his fæces. The carrier himself has become immune to their effects, but they are still infective to other people. The presence of a carrier in a house or village is a danger to the community.

Anti-Toxins and Vaccines.—Disease-causing germs may gain access to the body through a breach in the skin, such as that made by a bite, scratch, cut, abrasion, or wound of any kind, or through the mouth, lungs, or any of the natural orifices. If these germs succeed in finding a good site, where conditions are favourable for growth, they begin to multiply at an incredible rate and to manufacture their special poisons or toxins. The mischief caused by these germs may either be almost entirely confined to one spot, as in the case of an abscess, or the germs and their poisons may be carried in the blood stream to all parts of the body, resulting in an acute fever. The nature of the disease produced will depend on the variety of germ.

Anti-Toxins.—Nature has provided the body with several methods of defence against these invaders and their toxins or poisons. One of the most important means is that undertaken by the different varieties of leucocytes or white cells of the blood. Among their duties are the destruction and removal of germs and the production of substances which will destroy their poisons. These substances are called anti-toxins. As every poison is said to have its antidote, so every toxin probably has its anti-toxin, though up to the present, the anti-toxins of only a certain number of diseases have been discovered and are available for use.

The production of anti-toxins in the body goes on in sickness and in health. People are said to be immune to a disease, when they have, continually circulating in their blood, a sufficient quantity of the anti-toxin of that disease to destroy or neutralize its germs and their poisons, if any should gain access to the body.

The anti-toxins of some diseases, however, may be limited or absent from the blood ; but when germs attack the body and give rise to these diseases, the process of manufacture is stimulated to activity. The result of such a disease will depend on whether the output of anti-toxin is large enough to destroy the poison before it has had time to damage the body irretrievably. Often the race is a very close one : if the infection is virulent, or the body defences poor, then the result may be tragic.

Medicine and nursing play a very important part in the destruction of the invading army of germs and the conservation of the strength of the patient ; but a most effective addition to the armoury of defence is the ready-made anti-toxin. Certain diseases affect animals as well as man. Blood taken from an animal who has suffered from one of these diseases, contains large quantities of the anti-toxin of that disease. If the serum or liquid part is separated from the solid and injected into the body of one suffering from a similar infection, the anti-toxin in it will at once begin to act on the poisons present in his blood and destroy them ; therefore no valuable time is lost while the white cells in the patient's blood are preparing their own anti-toxins.

Hence rapidly spreading and virulent infections, such as those of diphtheria, snake-bite, or tetanus, are best treated by an immediate injection of anti-toxin serum.

Vaccination.—Inoculation or vaccination is a most valuable means of protection against certain acute infective diseases such as smallpox, enteric fever, etc.

A vaccine for a disease or infection is a preparation of specially treated germs which, if introduced under the skin, will produce a mild form of that disease. The presence in the body of the poison from these germs has the effect of stimulating the white corpuscles of the blood to pour out quantities of anti-toxin, which will destroy similar germs if any should at a later period gain access to the body. These anti-toxins exist in the blood for a definite period after the injection, the period varying with the variety of germ. For this reason the immunity obtained by vaccination lasts only for a limited time, and vaccination, whether it be for smallpox, typhoid, or other diseases, must be repeated periodically in order to secure protection.

CHAPTER XV

TROPICAL DISEASES

Malaria.—In districts where malaria is prevalent most people sooner or later become infected by the malarial parasite. The infection is conveyed to them through the bite of a mosquito, which is itself infected by the germ. When these minute parasites have once got into the blood-stream, they enter the red blood corpuscles, destroy them, and in the process produce poisonous substances.

They increase at an appalling rate; in a week or ten days after the bite they may exist in the blood in such numbers that the poison from the broken-up corpuscles is sufficient to produce an attack of malaria.

The characteristic symptom of malaria is fever, which recurs at intervals of twenty-four, forty-eight, or seventy-two hours, the interval depending on the particular species of parasite in the blood. The patient may have been out of sorts for several days, languid, and perhaps irritable. The actual attack begins suddenly with what is called a rigor; in young children a fit or convulsion may be the first symptom. In a rigor there is shivering, chattering of the teeth, and occasionally sickness. The patient complains of cold, and if in bed, buries himself in the coverings. The temperature, if taken in this stage, is found to be several degrees above normal and still rising. The shivering fit is soon followed by one of excessive heat; the bedclothes are flung aside, the patient is flushed and his skin is hot and dry. He complains of thirst, breathes rapidly, and the pulse is quick. There may be severe headache, and sometimes there is delirium or vomiting. The temperature is anything from 102 to 106 degrees. This stage usually lasts for several hours. It is followed by profuse sweating which drenches the clothes and bed coverings. The temperature quickly drops to normal, the thirst ceases, and the sufferer is comfortable, though he may feel tired and languid.

If no treatment is given the attack is repeated at regular intervals.

All attacks are not typical and the symptoms may vary. They may be alarmingly severe or they may be so mild that the nature of the indisposition is unsuspected. The danger of slight cases is, that occasionally there is a sudden development of dangerous symptoms, with wild delirium, unconsciousness, or serious stomach and intestinal trouble. It is often very difficult to distinguish malarial attacks from meningitis, dysentery, enteric fever, or cholera; so the importance of having immediate medical advice is evident. In some cases it is quite impossible to be certain of the nature of the illness without examination of the blood.

Treatment.—Fortunately there is a drug which has what is called a specific action on the malarial parasite. This drug is quinine. If quinine is taken regularly it renders the blood unsuitable for development of the parasite, and when it is actually in the blood, quinine taken in sufficient doses will effectually destroy it. In districts where the malaria-carrying mosquitoes abound it is almost impossible to avoid being bitten, so it is advisable to take a course of quinine at intervals as a malaria preventive.

Children do not as a rule actively dislike quinine, and will take it without objection. A good way to give it is in milk. Let the child first have a mouthful of milk or of bread and butter, then give the powdered quinine in a tablespoonful of milk. Quinine tabloids do not easily dissolve; if given whole, the tabloid should be followed by a glass of water which has been made acid by the addition of a little fresh lime-juice. The acid will help to dissolve the quinine. In every case quinine is best taken after food, when the stomach contents are acid.

A child of one year can take half-grain doses three times a day, a child of two years one grain, of four years two grains, and so on, adding a half grain for each year up to twelve, when the dose will be six grains. A grown-up person may take ten grains three times a day during an attack.

As soon as an attack of malaria begins the child should be put to bed and given an aperient. Dilute lemon-water or fresh lime-juice may be drunk in the thirsty stage. The first dose of quinine should be given after the temperature has begun to come down. It may not prevent the next attack, but it will lessen its severity. The quinine should be given every six hours for the first two days, then three times daily for a week, or as the doctor may direct. After malaria a child is anæmic and below par, therefore a tonic or change of air is advisable.

Malaria, especially in a child, should never be regarded lightly. The outcome of a severe attack is always a matter of uncertainty, and even mild attacks, frequently repeated, may do lasting damage.

Prevention.—To understand the principles of prevention the fact must be clearly grasped that the disease can be conveyed to man only through the bite of a special species of mosquito which has become infected with the parasite through sucking the blood of a malarial patient. If the malaria-carrying insect can be exterminated in any district in which malaria is prevalent the disease will die out in that place. The mosquito can be got rid of by destruction of the adult insect or by making it impossible for the eggs to develop into maturity. A combination of these two methods is effective.

Kala Azar.—This is a chronic infective disease in which there is enlargement of the spleen and liver, irregular fever, anæmia, and wasting. It has often been confused with malaria, from which, however, it is quite distinct. It is found in India, China, Arabia, Central Africa, Europe, and America.

Kala azar is due to the presence in the body of a parasite, which is probably conveyed through the bite of a flea or bug. It attacks natives rather than Europeans, who rarely acquire the disease.

Treatment is by injection of a drug, and should be in the hands of a skilled doctor.

Plague.—Plague is one of those epidemic diseases in which the infection is spread through the agency of an insect, namely, a flea which infests the rat. The disease itself is caused by a minute germ which is contained in the blood of the infected rat. Plague is one of the most fatal of diseases to mankind and it is also deadly to rats. The presence of a dead rat in a house or compound at once excites the suspicion that it may have died of plague, and its body should be sent to the sanitary authorities for examination as to the cause of death.

Rat fleas live by sucking the blood of the animal, so if a rat is infected, the plague germs which exist in the blood are sucked up with it into the stomach of the flea. When the rat dies it is forsaken by the fleas, which migrate to other rats or may take refuge on the body of a human being, and through a bite infect him with plague. The germs may also enter the body through an abrasion of the skin caused by scratching, and it is possible that food which has been contaminated by rats may cause infection.

People of all ages, even young children, may get plague. Epidemics frequently occur in India, where cities and villages may be devastated by the disease. They also may occur in the tropical colonies.

Fortunately Europeans, unless they are actually brought into contact with cases, are not often attacked.

The disease shows itself at varying periods after the germ has entered the body ; it may appear in two days or less, or the interval may be as long as two weeks.

Before the actual symptoms appear, the patient may have been ailing for a few days with vague pains, lassitude, and depression.

There are three different types of plague. The most common is the bubonic, in which infection is concentrated in the glands, often those of the groin, sometimes of the armpit, and occasionally under the jaw. The second type is most fatal, the poison being virulent and affecting the whole body, so that from the beginning the case is hopeless. The third or pneumonic type attacks the lungs ; it resembles a severe pneumonia—these cases are almost always fatal.

In all these types there is high fever, the temperature may be 103 or 104 degrees, and even as high as 107 degrees. There is often a rigor in the beginning. The pulse is quick and the breathing hurried. These symptoms may come on very suddenly, the disease progresses rapidly, and within a very few hours the patient looks and is alarmingly ill. There is extreme weakness, the skin is burning hot, the eyes are sunken and bloodshot, the lips may be sore, the tongue is swollen and furred. The patient does not answer when spoken to, he is generally delirious, but may be unconscious or there may be convulsions.

In the bubonic type the swollen glands may be evident on the first day or they may not appear till the fifth. They may vary in size from a nut to a goose's egg. There may be either severe pain, little, or none. When the bubo appears the temperature begins to come down, there is profuse sweating, and the general condition of the patient improves. If the bubo is not treated it generally bursts, and there is a good deal of evil-smelling discharge. In some cases the bubo does not burst and the swelling gradually subsides.

Convalescence may take place in a week to ten days, or in two to three weeks. Death may occur about the fourth day; or later from exhaustion.

Some epidemics are less serious than others, but are never to be trifled with. Government takes special measures to deal with epidemics and plague areas.

In an outbreak of plague all persons not actually engaged in combating the epidemic in medical work or in nursing should leave the place. Rats and fleas are the great danger, and their complete destruction should be aimed at. Cats and dogs and other carriers of fleas should be regarded as possible carriers of infection.

In nursing cases of plague, ventilation of the sick-room should receive special attention. All discharges should be disinfected.

Treatment.—The patient should be made as comfortable as possible. Ice-bags and sponging will give relief during the fever stage. The buboes may have soothing applications, such as glycerine and belladonna, or, if inflamed, antiseptic poultices may be applied. In epidemics, help is usually sent as soon as possible, and treatment is taken in hand by the hard-worked medical staff and their assistants.

Cholera.—Cholera is much to be dreaded. It comes in epidemic form, is very infectious, and is one of the most fatal of diseases. The germs are passed in the watery stools of the patient in countless millions, and if by any means some of these manage to get into water, they multiply at a terrific rate and infect all who drink it. Though the infection is chiefly spread by means of water, it may also be carried by flies or other insects which alight on the stools or vomit, pick up germs, and convey them to any food or liquid on which they may rest. Articles of clothing or linen soiled by the patient are dangerous, and may carry the disease unless they are disinfected.

Cholera attacks those who are run down, the weakly, or those who are depressed by fright, though it may also attack the strong and healthy. It comes on quite suddenly, or it may begin with what is like ordinary diarrhœa.

The chief symptom is a profuse watery diarrhœa, the stools may be solid or semi-solid at first, but after a time the patient passes a liquid which is compared to rice-water and is nearly colourless, with little flakes or shreds floating in it. The discharge from the bowel is almost incessant. At first there may be only griping pains, but later they become severe and cramp-like, Vomiting of material similar to that passed by the bowel sets in. Within an incredibly short time the appearance of the patient changes. He looks terribly ill with sunken eyes and hollow cheeks. His face is pallid and grey, his skin cold and clammy, beaded with drops of sweat. The pulse is quick and thready, later it may become very feeble; the temperature is sub-normal. No urine is passed. There is restlessness and there may be delirium. Thirst is intense, owing to the loss of fluid, since the patient loses all he takes in. Death may occur within a few hours or in a day or two. If the symptoms subside and the body becomes warmer, vomiting ceases, and urine is passed, recovery may then take place and convalescence be established within a few days.

The disease may take a more prolonged course, with the setting in of fever. The face then becomes flushed and the tongue dry and furred, and symptoms resembling those of enteric fever may appear. The stools may now be more solid, but are still evil smelling. The patient may die after a week or two, or he may slowly recover.

Treatment.—The course of cholera is so rapid that treatment, to be of use, must be begun without delay. The patient must be put to bed at once, and kept lying down. On no account must he be allowed to sit up for any purpose. Hot bottles must be supplied and constantly refilled with hot water. Blankets should replace sheets. Sips of iced soda or plain boiled water may be given to allay the thirst, and stimulants such as champagne or brandy and water may be of use. No food of any kind should be allowed.

Medical help should be obtained promptly; for the most successful treatment is by the injection of salt solution into a vein, or cellular tissue of the body, and this can only be done by an expert. The fluid injected is of value in replacing some of the body fluid which has been lost. It is the loss of fluid which is one of the most serious dangers of the disease, so the importance of this treatment will be realized. Failing the immediate advent of the doctor, a solution of potassium permanganate may be made, and the patient encouraged to drink as much of this as possible. Enough permanganate to give a pink tinge to the water is required. Or if pills of potassium permanganate can be obtained, a 2-grain pill may be given every fifteen minutes for two hours, then one every half-hour till the stools are of a green colour. Every effort must be made to keep up the body warmth, and by the administration of stimulants to tide the patient over the danger period.

It must not be forgotten that all vomit and material passed from the bowels are highly infectious.

During an epidemic great care should be taken over food. All water should be boiled, weak tea or lemon-water may be used as the staple drink. Uncooked fruit and vegetables, such as melon or cucumber, should be avoided. War should be waged against flies, and all food protected from them.

Diarrhœa, which is sometimes a premonitory symptom of cholera in an epidemic, should be promptly treated. Chlorodyne, an old-fashioned and useful medicine, chalk mixture, or lead and opium pills, may be given. All chills, damp, and over-fatigue must be avoided. A cheerful spirit is an invaluable asset during an epidemic.

Sleeping Sickness.—This most serious condition is caused by the presence in the blood of minute germs called trypanosomes, which infect big game or cattle, and are conveyed to men through a bite from the tsetse fly. This fly is found in certain parts of Africa and South-West Arabia. It inhabits a narrow belt of ground not more than fifty yards wide near the banks of rivers or lakes, where there is uncultivated vegetation and trees. It is an ordinary-looking fly, brownish or dark grey in colour, with a long proboscis. It bites during the day-time only, and flies near the ground.

Sleeping sickness occurs in Nigeria, Uganda, and Rhodesia. Europeans are occasionally attacked, though it is most common among the natives.

It is most important to recognize the early symptoms of the disease. Round the bite there is inflammation lasting for a few days. Fever follows, and in Europeans there is a rash of large ring-shaped patches of redness, generally on the chest and back, though occasionally patches may be seen on other parts of the body and face. After a few days the fever subsides, but it reappears at irregular intervals. The general health soon suffers, there is weakness and listlessness, anæmia, painless enlargement of glands, and there may be headaches. After months, perhaps years, the characteristic symptoms of advanced sleeping sickness may appear, usually with a fatal termination.

Treatment.—Treatment, to be successful, must be begun at an early stage. If there is any suspicion of sleeping sickness, especially if the patient has been bitten by a tsetse fly, an examination of the blood should at once be made. Should it be found that trypanosomes are present in the blood, the patient should be sent home for treatment without loss of time.

Relapsing Fever.—This is an infectious fever which is caused by the presence in the blood of micro-organisms called spirochætes. These gain access to the body through the bite either of bugs, lice, or ticks, the latter being small oval insects with head, chest, and body in one mass, and four pairs of legs. The female of the tick is larger than the male, at times it may be half an inch in length, but is generally smaller than this. It attaches itself to the skin of a human being during the night, and sucks blood till gorged, then drops off. It is found in all parts of the tropics.

To avoid being infected with relapsing fever, native houses, which are sometimes infested by ticks and other insects, should be avoided at night-time. Neither native bedsteads nor the ground should be used as sleeping-places, and the close neighbourhood of a village should not be chosen as a camping-place.

The chief symptom is fever, lasting usually from five to seven days, and beginning suddenly with rigor or chilliness and rising to 104 or 105 degrees or even higher. The pulse is quick, varying from 110 to 120 degrees. There may be giddiness, nose bleeding, or vomiting, with severe headache, and sometimes there is delirium. Occasionally there is a rash. At the end of the week or earlier, the temperature suddenly drops to normal with rapid recovery; but after an interval of from five to thirteen days, there is a similar but milder attack, which, however, does not last so long; in some cases this may be followed by repeated attacks. The danger of relapsing fever lies in the complications which may occur. These may affect the eyes, the nerves, the kidneys, the joints, etc.

Treatment.—The patient should at once be put to bed and carefully nursed, and should be put in charge of a doctor as soon as possible for treatment. The most effective drug is given by injection, and can only be administered by an expert.

Dengue.—This is an epidemic tropical fever which is occasioned by the bite of a mosquito.

There is an interval of from five to nine days after infection, before the patient becomes feverish and shows actual symptoms of dengue, though there may have been warning pains in a limb or in one of the small joints of a toe or finger. The attack begins suddenly with fever, headache, prostration, and severe rheumatic pains in the back. The eyes are often bloodshot and the face flushed. The temperature is 103 degrees or more and the pulse rises to about 120. After several days of misery, the temperature gradually comes down, and a few days of comparative comfort are passed; but these are followed by another attack of fever lasting a few hours only and accompanied by a rash of dark red spots. These appear first on the hands, wrists, elbows, and knees, and then extend to the limbs and chest, after which they quickly fade.

The attack resembles one of influenza in that it leaves a legacy of great weakness and depression. Rheumatic pains in the knee, shoulder, or one of the limbs almost always persist for some time. These pains are usually severe in the morning and grow less as the day goes on.

The treatment is rest in bed, and the avoidance of chill. The diet should be light during the fever, and the patient should be well fed during convalescence.

Sandfly Fever.—This is a fever of three or four days' duration which is epidemic in India. It is caused by the bite of an infected sandfly, which is a blood-sucking insect, grey or drab in colour, and so tiny that it easily passes through the meshes of mosquito netting. It is attracted by artificial light, and feeds chiefly in the evenings or during the night. The bites cause raised lumps, sometimes blisters, and are extremely irritating.

The symptoms appear from four to seven days after the bite, with fever, sometimes a rigor, headache, especially behind the eyes, and pains in the back and legs, with muscular stiffness. The eyes are bloodshot and the face flushed. The patient feels drowsy but cannot sleep. On the second day the temperature may be 103 or 104 degrees, and remains high for about twenty-four hours, then it gradually falls, with sweating, diarrhœa, or nose bleeding. On the fourth day the temperature reaches normal and the patient is convalescent. There is extreme weakness, which often lasts for some weeks.

The treatment is bed, nursing, and light diet while there is fever.

Smallpox.—This is one of the most serious of the acute infectious diseases which are epidemic in the tropics. Its chief characteristic is an eruption, which is apt to leave permanent scarring. The infection is carried by people who have been in contact with others suffering from the disease, or by discharge from the patient, and is often picked up in public carriages, railway trains, etc. It attacks people of all ages, and is especially fatal to children.

The disease shows itself in nine days or a fortnight after exposure to infection, by a chill, or, in a child, by convulsions, with headache, backache, and vomiting. The temperature rises to 103 or 104 degrees during the first day and the pulse is quick. There is restlessness and there may be delirium. On the second day, in some of the cases, what is called a primary rash may appear on the lower part of the abdomen, sides, or inner portion of the thighs. This may be either a red flush like that of scarlet fever or it may resemble the rash of measles. About the fourth day the true rash of smallpox comes out, and as it appears, the temperature falls and the patient becomes more comfortable. The eruption of raised red spots or papules is first seen on the forehead and wrists, and it quickly spreads over the body. The papules become blister-like, with a flat top; these blisters or vesicles inflame, fill with matter or pus, and become more globular. As this happens the temperature again rises, and the general symptoms return. The face swells, and the eyelids become puffy, so that the patient cannot open his eyes. Pustules may even form in the mouth and throat, rendering swallowing and talking difficult or impossible. On the tenth or eleventh day the fever disappears and convalescence begins. The pustules dry up and form scabs, which, when they fall off, may, or may not, leave scars. This is the course of an ordinary case of smallpox, but there are other more severe types such as the confluent and the hæmorrhagic or black, both of which are very fatal.

The disease may be followed by complications, chiefly affecting the throat or chest. In former times blindness was a frequent result, but with good and skilled nursing it is now not a common occurrence.

Treatment.—The nursing of smallpox is very trying and should, if by any means possible, be entrusted to a trained nurse, who will best know how to relieve the distressing symptoms and make the patient as comfortable as may be. If a nurse is not available the following hints may be of service.

Attention to the skin, with the constant application of lint or clean boiled rag, soaked in an antiseptic solution, will give relief. When the scabs form, glycerine, vaseline, or oil should be applied so as to keep them moist. The patient will be sensitive to light, so that the room should be darkened, preferably with material of a red colour, red light being said to prevent scarring. Special attention should be paid to the eyes, which should be frequently bathed with weak boracic or salt solution (one teaspoonful to a pint of water). The patient and nurse should be absolutely isolated, and every precaution should be taken against spread of infection.

Fortunately we have, in periodical vaccination with calf lymph, a most valuable preventive of smallpox. All those going out to India and the tropics should be vaccinated before sailing; and during epidemics, revaccination is necessary. After exposure to infection, vaccination and isolation for sixteen days should be the rule. Speedy vaccination may prevent the disease, or at any rate modify its severity.

Dysentery.—*Acute dysentery.*—Dysentery is one of the common bowel diseases of India and the tropics. It is caused by infection from parasites, which, swallowed with liquid or solid food, attack and injure the delicate lining of the intestines.

The chief symptoms of dysentery are diarrhœa, with the passage of blood and mucus in the stool, and moderate fever. It is a most exhausting disease, for poisonous substances are manufactured by the germs which affect the body generally. As soon as symptoms appear the patient should be taken in hand without delay and receive prompt and effective treatment.

Treatment.—The germs which cause dysentery are fo different kinds, and treatment which will cure dysentery caused by the one variety will have little or no effect on that caused by the other. As the symptoms of both are in most respects similar, microscopic examination of the stools is the only satisfactory method of ascertaining which infection is present, and consequently, the right treatment to adopt. For these reasons it is important to call in the doctor as early as possible. In the meantime the patient should be put to bed at once, kept warm, and put on a strict milk diet. No solid food of any kind should be given. A dose of castor oil may be taken as a preliminary until the doct comes and orders appropriate treatment. If there should be delay in his coming, small doses of Epsom salts may be given. A teaspoonful of this may be dissolved in 2 tablespoonfuls of water, and 1 teaspoonful of the mixture given every two hours to a child of six, 1½ teaspoonfuls to a child of nine, and 2 teaspoonfuls to one of twelve. A grown-up person may take as much of the salts as will lie on an anna dissolved in half a wineglass of water at two hourly intervals.

Milk may be taken plain or with soda water, hot or cold, and a child of six should have at least 2 pints in twenty-four hours when on a strict milk diet. The feeds should be given every two hours.

As the infection is conveyed by flies, dust, water, and any food which has been contaminated, it will be appreciated how very necessary it is to take every precaution to cover all food, to boil all drinking water, and to avoid raw vegetables, or fruit which is unripe, unsound, or may have by any possibility become infected.

In this, as in all infective bowel diseases, it is the duty of the nurse to see that all discharges or excreta are destroyed by burning or are made harmless by disinfectants before being removed. The addition of strong crude carbolic acid, or of creosol (2½ per cent.), to the contents of the utensil after use will effectually kill all germs contained in it.

Chronic Dysentery.—When the condition has been neglected and has become chronic, or if the patient is subject to recurring attacks of dysentery, very careful dieting and strict moderation in eating must be the rule. Beef, mutton, coarse vegetables, pickles, highly spiced or any food difficult of digestion should be avoided. Tender chicken, fish, eggs, well-cooked fruit and the more delicate vegetables, and all kinds of milk preparations may be eaten. Chills, damp, or cold baths may, by lowering the vitality, predispose to an attack. The abdomen should be kept warm, and in the hot weather the current of air from the punkah or electric fan should not be allowed to play directly over the body. A light flannel or woollen vest is a protective, or a thin Kashmir shawl may be used as a blanket. Dysentery in adults is sometimes followed by complications such as liver abscess, which is a very serious condition; it is therefore very important that no steps should be omitted to ensure complete recovery from the illness.

Sprue.—Sprue is a disease of the bowels, which rarely attacks children. Older people who have lived in the tropics for a long period and have become weakened by attacks of dysentery or hill diarrhœa, or are worried or depressed, are liable to contract sprue.

The chief symptoms are early morning diarrhœa and sore mouth. The stools are very copious, greyish in colour, frothy and malodorous. The bowels are opened about three or four o'clock in the morning, and from that time till about eleven o'clock the motions are frequent. During the rest of the day there is a respite, though there may be a good deal of abdominal discomfort with flatulence and distension. Sores or ulcerated patches are scattered on the mouth, tongue, inside of the cheeks, and sometimes the palate. They are extremely sensitive, and render the taking of hot or acid food or liquid very painful.

Treatment.—This condition needs early and continuous treatment. Milk diet and complete rest are the great essentials. Often a sea voyage with entire change of surroundings is beneficial. A diet consisting mainly of strawberries has, in some cases, had very good results, but it is not often possible to obtain fresh strawberries during so long a period as is necessary for the cure.

Enteric Fever and Paratyphoid.—Though these diseases are by no means peculiar to the tropics they are of frequent occurrence, and, as recognition of their presence at an early stage is important, a few words as to their symptoms may be of use.

Typhoid and all kinds of paratyphoid fever are caused by poison-producing germs or micro-organisms which, in addition to giving rise to general symptoms, attack the walls of the small intestine, the result being ulceration and sometimes perforation. The germs are conveyed to the intestines chiefly in food or liquid contaminated by flies or fingers which have touched the infective discharges of a patient. They are present in urine and fæces, and if these are spilled on the clothing, it too becomes infectious. The germs do not confine their activities to the intestines, but get into the general blood-stream, which carries them and their poisons all over the body. The disease is very infectious, and the nurse and those who come into close contact with the patient need to be exceedingly careful, both to avoid being infected themselves and to prevent the spread of infection. Children may acquire the disease; but young people and those in early middle age are most frequently attacked by it.

There are differences between the various kinds of typhoid infection, which can only be distinguished by skilled examination of the blood. The symptoms are in most respects similar.

The illness generally comes on gradually, but it may start suddenly with a rigor, or in a child, with convulsions. Headache is frequently an early symptom, sometimes there is bleeding from the nose, usually the patient is out of sorts, with vague pains, loss of appetite, and a coated tongue. There may be diarrhœa, which is sometimes followed by constipation. The temperature is varied: during the first week it rises higher each day in very typical manner; during the second week it remains high, never coming down to normal; and in the third week of the illness it usually gradually comes down a little lower each day.

A distinguishing sign which is present in a large proportion of these cases from the sixth to the tenth day, is the appearance in crops of rose-red spots, chiefly on the abdomen, but sometimes on the arms and legs.

Enteric or typhoid fever is a long illness which requires the best medical attention and most careful nursing. During its course, serious and dangerous symptoms may arise, needing prompt and skilful treatment, and the patient's life may depend on the possibility of obtaining this. If within reach of a hospital or nursing home there is no doubt of the wisdom of taking the patient there.

As soon as the existence of the disease is suspected the patient should be put to bed and kept lying down, and his diet strictly limited to milk. No solid of any kind should be given, fruit is specially harmful. The doctor should be sent for at once. No medicine should be given unless ordered.

Enteric fever is one of the diseases which may be spread by human carriers, so when the patient is convalescent it is well to ascertain if he is quite free from infection.

As a preventive, inoculation with a triple typhoid vaccine is advisable. All young and middle-aged people, especially those who travel much, should be inoculated at intervals of two years. Those going out to the East for the first time should always be inoculated before leaving England.

Ankylostomiasis.—This is a disease which is prevalent in Eastern Bengal and some parts of Africa, so that there is always the possibility of its acquisition by Europeans living in those districts, though, up to the present, only a few cases have been reported.

It is caused by the presence in the intestines of a minute worm, which clings to the wall of the bowel and nourishes itself by sucking the blood of the patient, who consequently becomes very anæmic and weak, with perhaps an excessive appetite and either constipation or irregularity of the bowels.

The parasite lives in muddy water and moist soil during one period of its life. It may find its way into the human stomach and intestines through the drinking of impure water, from soiled hands, or even eaten with dirt by children who have acquired the habit. Wet clothing or shoes may convey the infection, which has been known to pass through the human skin.

Fortunately the disease may be cured by thymol, which must be administered under a doctor's direction.

Thread Worms.—Thread worms are minute, thread-like parasites, which get into the lower bowel, and by their presence in large numbers cause severe itching at the orifice, and consequent scratching. Sleep is disturbed, and there may be grinding of the teeth and restlessness. The infection may be acquired by eating raw vegetables contaminated with eggs of the worm, and it is kept up by scratching and fingering the itching part.

The worms may be got rid of by an injection of salt water, or an infusion of quassia chips, made by pouring boiling water over them and cooling.

Round Worms.—Infection of the bowel with round worms is common in the tropics. Children and adults are liable to get infection from swallowing the eggs (which are not visible to the naked eye) in drinking water, or with fruit or uncooked vegetables. The egg develops in the intestine into a large round worm several inches long. The presence of such a worm may cause no definite symptoms, but usually there is indigestion, variable appetite, bad breath, disturbed sleep, and nervous irritability. Occasionally there may be nettle-rash. It is not very rare for a worm to be vomited or to appear from the nose. There may be only one worm present or they may exist in numbers.

Treatment.—The worm may usually be killed and expelled by santonin powders, which should be taken under direction of a doctor. Where the presence of the worm is suspected a dose of from half to one grain of santonin combined with half a grain of calomel may be given to a child of three, one grain of each to a child of six, two grains of each to a child of twelve. The fæces may be examined under a microscope, and if ova or eggs are seen, it is certain that a worm is present in the intestines.

Tape Worms.—These are occasionally found in people dwelling in the tropics, but only when they have eaten pork or ham, as it is from the flesh of a pig that the infection is derived. Tape worms are immensely long and flat and the head is very small. The tape-like segments are brittle, and easily break off at the divisions.

The symptoms of tape worm infection are sickness, loss of appetite, anæmia, and irritability; the discovery of one or more segments in the stools is a sign of the presence of a worm.

The worm may be got rid of by giving male fern. The dose for an adult is one teaspoonful of the liquid extract of male fern. It should be taken fasting in the morning, the intestine having been cleared out previously by two days' preparation. To ensure a clear bowel, an aperient such as castor oil should be taken each evening for two days: the diet should be soft the first day, and only liquids should be taken the day before the male fern is given.

A dose of salts should be taken six hours after the male fern if the worm has not already appeared.

It is necessary to ascertain if the head has come away, for if this is left behind the segment attached to it will go on producing new segments until the worm has attained its previous size. In about three months this will have happened, and the same treatment must be repeated. If tape worm is suspected in a child, the doctor should have a specimen of the stool for examination; if a worm is present he will prescribe the necessary medicine and method of giving it.

Guinea Worms.—The Guinea worm is common in India and Africa. The male is less than an inch in length, but the mature female may be a yard or more long though almost pin-like in diameter. It is a worm which, when it is extremely minute, may be swallowed in impure water. The female worm having gained entrance to the intestine burrows its way through the tissues and after some time finds its way to the surface. It may appear under the skin of the body or limbs, generally of the leg. Sometimes coils of the worm may be seen or felt under the skin, but more often the presence of the worm is indicated by a small blister. When this breaks, or is pricked, a milky fluid exudes, which, if examined, is seen to consist of hundreds of minute creatures, the offspring of the worm. Occasionally the head of the mature worm protrudes through the opening. The natives have a custom of winding the worm round a piece of stick, which is turned a little each day till the creature is withdrawn, but usually the worm breaks before the process is complete and is left in the body, causing irritation and inflammation.

Treatment.—The most satisfactory treatment is to keep the part continually moist by means of a wet compress. If this is constantly wetted, in two or three weeks the worm will come out of its own accord, or it may be absorbed. It is wise, however, to receive treatment by a doctor who is accustomed to dealing with such cases.

CHAPTER XVI

OTHER INFECTIOUS DISEASES

Influenza.—Influenza is one of those epidemic diseases, against the spread of which no precautions seem to be effective. It occurs in all parts of the world and at all seasons of the year.

The symptoms of influenza are extremely variable, though the respiratory system is most commonly affected, with catarrh of the nose and throat, bronchitis, and a tendency to the development of pneumonia. In some epidemics the nervous, and in others the digestive, system is most often attacked, or fever may be the most prominent symptom. In the gastric type, there is vomiting, which is commonly accompanied by abdominal pain and diarrhœa. In the nervous type, there is severe headache, and pain in the back and limbs. In all varieties, there is fever, which may be attended with delirium; and intense depression follows the attack.

Influenza is of importance from the fact that it often produces a great weakening of the body's defences, so that other infections are liable to gain hold and spread with rapidity. Complications affecting the lungs, heart, kidneys, etc., not infrequently accompany influenza, and in children the ears are apt to suffer. Many chronic illnesses date from an influenzal attack.

Treatment.—The patient should be isolated, put to bed at once, and kept there till the temperature is normal and all symptoms have disappeared. While in bed the diet should be light and nourishing, and during convalescence both generous and appetizing. The depression should be counteracted by cheerful surroundings and, if possible, a change of air.

Diphtheria.—This usually comes on suddenly with vomiting, pains in the back and limbs, moderate temperature, and a rapid and weak pulse. The breathing is harsh, and there may be slight cough. Swallowing is painful, the breath is offensive ; and the glands of the neck may be enlarged. If diphtheria is known to exist in the locality, such symptoms will at once excite suspicion of the nature of the illness, which is made certain when a greyish membrane is seen covering the back of the throat and tonsils, or in some cases, the inside of the nose. The early stages of diphtheria resemble a bad sore throat or an attack of tonsilitis—only a microscopic examination of the exudate from the throat and discovery of the germs of diphtheria can give an immediate diagnosis. Any doubtful case should, if possible, be verified by this means. Prompt treatment by the injection of diphtheria anti-toxin is necessary.

The great danger in diphtheria is that the throat may be so filled by the membrane, that breathing is rendered difficult or impossible. It may be necessary to keep the passage open by placing a tube in the larynx, or by making an opening in the trachea below the obstruction and keeping the passage clear by means of a tube, in order that air may reach the lungs. Other dangers are those of heart weakness and paralysis.

Treatment.—The patient should be kept absolutely at rest, not being allowed to sit up or move for any purpose, and all sudden movements should be prevented.

Diphtheria is an illness that demands constant attention on the part of doctor and nurse, and every endeavour should be made to get skilled treatment and nursing for the patient. Germs may be coughed up or spat out with the discharge, therefore much care in the avoidance of infection is necessary. In the absence of a doctor the directions given in membranous laryngitis may be followed.

Scarlet Fever.—This begins with high fever, rapid pulse, sore throat, and vomiting. In young children a convulsion may be the first symptom. The throat is inflamed and, if examined, is seen to be of a dark red colour. The rash comes on in twenty-four hours or more. It consists of a dark red flush, first affecting the neck and chest, and then spreading all over the body and face, except for a white area round the mouth. On looking closely into the rash, it is seen to be composed of bright red spots placed closely together. The tongue is coated and white, and as points of red can be seen through the coating, it is said to be a "strawberry tongue." In two days to a week, the rash disappears, and the flaking or peeling stage begins.

This latter stage is of uncertain duration, and until it is over, the patient is infectious and should be kept isolated. Scarlet fever needs careful nursing; and a watch should be kept on the child's health during convalescence and for some time after, as complications affecting the kidneys, heart, eyes, and ears may arise.

Treatment.—The main points in nursing are the avoidance of chills and attention to the throat, which should be frequently gargled. A simple gargle, such as alum or salt and water (one teaspoonful to the pint), may be used, if no doctor is in attendance. The diet should be liquid till the fever has disappeared and the throat is free from pain.

Measles.—Measles usually comes on gradually, with a cold in the head, watering of the eyes, cough, sneezing, and discharge from the nose. The rash, which consists of small red spots, appears first on the forehead near the hair, and behind the ears, then spreads to face, neck, and body: There is but little fever, the child suffers from discomfort at first, but only exceptionally is he really ill. The danger of measles, like that of other common contagious illnesses affecting children, is that of complications. Bronchitis and pneumonia are apt to follow. During convalescence, the child's throat and ears should be examined, as enlarged tonsils, adenoids, and ear trouble may date from measles.

Infection is greatest during the stage of "cold" before the appearance of the rash.

The treatment is bed and isolation, plenty of fresh air, and the avoidance of chill.

German Measles.—This is in no way related to ordinary measles. As a rule there are no symptoms, though in some cases the glands of the neck may be enlarged. The rash of red spots is widely spread over the body and fades quickly. The child should be kept in bed for a day or two, till it is certain that the rash is not that of any more serious condition.

• **Whooping Cough.**—This begins as an ordinary cough, and it may be days or weeks before its nature is detected. The cough is in paroxysms, which gradually become more severe, till at length the characteristic whoop or deep inspiration is heard. Vomiting often accompanies the fits of coughing. Whooping cough is very infectious, so isolation from other children is necessary. It is wise to put the child in the care of a doctor, for complications due to the strain of coughing may appear, and chest and other symptoms sometimes develop. General attention to the health and plenty of fresh air are necessary. Sometimes a change may cut short an attack, but the condition may last for months.

Chicken-pox.—This is not a serious illness. The child rarely has any symptoms and there is very little fever. It is of importance, however, because, in the early stage, it is sometimes difficult to distinguish between its characteristic eruption of tiny vesicles or blisters and those of smallpox.

Mumps.—Mumps is an infectious disease in which there is inflammation of the large gland which is situated under the jaw in front of the ear. The first symptom is stiffness and tenderness of the neck, and this is accompanied by a slight rise of temperature. The neck then begins to swell, and there is a good deal of pain, with difficulty in opening the mouth and swallowing. Both sides may be affected at once, or the symptoms may appear first on one side and after a few days extend to the other.

Treatment.—While the glands are swollen and painful the patient should remain in bed. The food should be liquid and bland, no acid or very sweet things should be allowed. Applications of dry heat will relieve the pain and, at a later stage, gentle friction with sweet oil will help to disperse the swelling. All cases of mumps should be kept isolated for at least a week after all swelling has disappeared.

Length of Time of Isolation

Diphtheria.—Ten days after the throat is well if the case is very mild; when the illness has been severe, and indeed if possible always after any attack, a microscopic examination of the throat exudate should be made, to ascertain if it is free from diphtheritic germs. Until this is the case infection is present.

Scarlet Fever.—Until all peeling has ceased.

Measles.—Two weeks after the rash has disappeared.

German Measles.—A week after the eruption has faded.

Whooping Cough.—Until the whoop has disappeared.

Chicken-pox.—Until all the scabs have fallen off.

Mumps.—Three weeks (one week after subsidence of swelling).

Time after Exposure to Infection, in which first symptoms may appear

Diphtheria.—Variable—one day to two weeks.

Scarlet Fever.—Three to five days, not often longer than one week.

Measles.—Nine to fourteen days.

German Measles.—Ten to sixteen days.

Whooping Cough.—One to two weeks.

Chicken-pox.—Fourteen to sixteen days.

Mumps.—Ten to twenty-two days.

CHAPTER XVII

SKIN TROUBLES

Urticaria.—Urticaria, or Nettle Rash, is generally due to the presence of some irritating substance in the stomach or intestines, such as fish, stale meat, strawberries or other indigestible food, or worms; it may be also caused by the bite of an insect. It not infrequently comes out during teething.

It appears as raised blotches or wheals, first red, then white, in the centre surrounded by a red flush. There is burning and itching. Both rash and symptoms usually disappear within a few hours. An aperient, such as Epsom salts or a small dose of calomel, may be given. A soothing application such as calamine or lead lotion will allay the itching.

Eczema.—This is a common skin disease, difficult to cure and apt to recur. It is caused by irritation, generally local, such as that of wet napkins, rough clothing or cold winds, or by digestive disturbances due to bad feeding or over-feeding. When the skin is broken various infective germs may be conveyed to it by the fingers, thus aggravating the condition. Eczema may appear on the face, behind the ears, on the hands and limbs, and between folds of skin. It begins with a reddened and burning skin, on which are raised spots which become filled with fluid and burst. Fluid also oozes from the inflamed skin, and where the amount exuded is large the condition is known as "weeping eczema." In other cases the surface may be dry and covered with crusts. There is a good deal of irritation and consequent scratching.

Eczema is often accompanied by indigestion, and may also be associated with asthmatic attacks.

People suffering from eczema should receive medical treatment. The general health should be attended to, and the food should be plain and digestible. The parts affected should be kept clean and dry, very little water and no soap should be used. A simple ointment, such as lanoline, spread on lint, may be applied until the doctor prescribes the appropriate remedy.

Ringworm.—This is a disease of the skin caused by a fungus, and it may affect either the head or body. It appears in ring-shaped brownish scaly patches. The infection spreads from the centre, and as it spreads attacks the hairs of scalp or skin. These become brittle and fall out, so that ringworm affecting the scalp results in patches of baldness.

Ringworm is very infectious, so all hair brushes, towels, clothes, etc., must be disinfected and every precaution taken to prevent other children acquiring the disease. The hair should be closely cut or shaved off over an area half an inch outside the patch. The head should be washed with carbolic soap, and tincture of iodine painted over the patch daily for three days, then repeated after a few days' interval. Another treatment is to apply chrysarobin ointment, spread on a piece of lint cut to the required size. This should not be continued after signs of irritation appear.

Boils.—Boils are not uncommon in those who are run down. They occur usually in or after the rains, more especially in districts where there is moist heat. They may be single or very numerous, and often appear in crops—infection being readily spread from one part of the body to another by the discharge.

The best treatment is the application of tincture of iodine. The boil should not be poulticed, but if it is coming to a head and appears likely to burst, the old-fashioned soap plaster is an effective application. A tiny hole, the size of the head of the boil, should be made in a small piece of thick brown paper or wash leather, which is spread with soap made into a thick jelly by the addition of hot water. This application will help matters and prevent the surrounding skin being touched by the discharge, which is extremely infectious. When the boil has burst the part should be cleansed with an antiseptic lotion, dried, covered with boracic powder, and a dry dressing applied. The discharge should not be touched with the fingers.

Boils occurring on the head or under the arms are likely to be troublesome, and generally need opening. They should be treated by the doctor. In all cases the general health should be attended to, and often a change of air is one of the best helps to recovery.

Delhi Boils. Oriental or Tropical Sore.—A tropical sore is a serious and not uncommon parasitic infection of the skin, which begins as a small, innocent-looking, itching, raised, red spot. After some time it becomes scaly, then encrusted, and finally breaks down into a chronic sore or spreading ulcer which takes a very long time—months or even years—to heal. It is difficult to cure, and when healed leaves a depressed scar. These sores may be single or multiple; they may attack face, limbs, and occasionally the body. They are generally about the size of a penny, but may be larger. The infection is probably conveyed through the bite of an insect, and the sore may take months to develop.

The treatment should be in the hands of an expert doctor; ordinary ointments and applications have no good effect.

Dhobi Itch.—In the tropics, irritating diseases of the skin are very prevalent, and there are many varieties of infection causing them. The name "dhobi itch" is applied to a very irritating rash which affects those parts of the body in which there is a good deal of moisture such as the armpits, the groins, and between the legs and toes. It is possible that the infection, which in many cases is due to a ringworm-like fungus, may sometimes be derived from clothes infected during the process of washing—hence the name. The area of skin affected first shows raised red rings which are very irritating. Later they unite and become scaly and brownish in colour; or the scratching may cause the skin to become raw and red, and, if other infections are carried in the finger nails, may result in boils and abscesses.

The parts should be well washed with carbolic soap and water, and, in the first stage, a soothing application such as lead or calamine lotion, or hazeline cream applied. When the patches are scaly and dry resorcin ointment may be used. As a preventive the clothes should be frequently changed and the body kept as clean and dry as possible. An antiseptic dusting powder may be used after bathing.

Scabies or Itch.—This is an intensely irritating and contagious disease caused by a small insect which burrows and lays its eggs under the skin, especially between the fingers and toes. The scratching which takes place not only causes local spread of the infection, but the abraded skin enables the germs of other skin diseases to enter and flourish. Scabies is very infectious, and is spread by means of brushes, towels, bed linen, and clothes.

The treatment is a hot bath with carbolic soap. Sulphur ointment should then be smeared over the affected parts. All clothes and bed linen should be kept separate and should be disinfected, preferably by baking.

Pediculosis.—Pediculosis is an affection of the scalp or body by pediculi or lice. It is not uncommon for children, especially those who are weakly or have long hair, to contract the infection from servants. The bite causes great irritation and consequent scratching, so that the head may become very sore. The insects are easily got rid of by rubbing white precipitate ointment into the scalp. The difficulty is that the nits or eggs are attached to the hairs by a sticky material, and are not removed by washing, so, after a few days, a fresh crop of pediculi will hatch out. Dilute vinegar and water will help to dissolve them off, and may be used if the head is not too sore. Persistent use of the ointment will result in a clearance, or the process may be hastened by washing the head with liquid paraffin, but, if this is done, every precaution must be taken against accident by fire.

CHAPTER XVIII

BITES, STINGS, ETC.

Snakes and their Bites.—There are hundreds of varieties of snakes in the tropics. Some kinds are very deadly, their bites usually being fatal; others are less poisonous; and the remainder, greatly in the majority, are harmless.

The snake is regarded with veneration by the Hindus, who look upon it as a sacred animal; and they seek to propitiate it by placing offerings of milk and other food near the approach to their haunts, which are often in the crevices of old walls, in piles of wood, or in rocks or holes in the ground.

The appearance of the snake needs no description. The long, sinuous, scaly body, the absence of legs, the flat head with lidless eyes, forked tongue, and numerous teeth, are all well known.

The distinctions between different varieties of snakes and between harmless and venomous species are not easy to recognize, only an expert can always identify them with certainty. Such differences as the shape of the head and its bones, the teeth, and the arrangement of the scales, have to be taken into consideration. There is great variation in size, marking, and colour.

Poisonous Snakes.—The front teeth or poison fangs of venomous snakes are characteristic. These teeth are grooved to form a channel, within which is a duct. This duct is connected with the poison-secreting gland, which is situated under the jaw. When the snake strikes its victim the venom is ejected down the ducts into the wound made in the skin by the sharp fangs.

Every bite received from a venomous snake is not necessarily fatal, though the mark of the fangs may be visible on the skin. It is possible that, at the time of striking, the gland may have been exhausted of poison, or the quantity of poison which enters the wound small. About 30 per cent. of the cases of bite from a venomous snake are fatal.

Poisonous snakes of the tropics are of two families :—the Colubridæ, to which the cobra, the King cobra, and the kraits of South Eastern Asia, and the coral snake of the West Indies and British Guiana belong; and the Viperidæ, the best-known member of which is the deadly Russell's viper.

The hooded cobras are large and brilliantly coloured, the King cobra is distinguished by its head markings, which resemble a pair of spectacles. Cobras and kraits have a round tail, and kraits have a row of large scales down the middle of the back.

Vipers have a diamond-shaped head, narrow neck, and short stumpy tail.

The symptoms of snake-bite vary with the variety of snake from which the bite has been received.

Cobra and krait venoms cause the following symptoms: there is pain and some swelling in the region of the bite; and for a time little else may be evident, but gradually the severe symptoms come on, and in about an hour the victim has become weak and unable to stand. He is apathetic or semi-conscious. The pupil of the eye is contracted; saliva drops from the mouth and vomiting occurs; then the tongue and throat become paralysed, breathing becomes difficult and finally ceases. In less severe cases, the breathing gradually improves and recovery may take place quickly.

A bite from one of the viper family is very dangerous, and the symptoms come on with extreme rapidity. There is great pain in the wound, and in a few seconds or minutes very extensive swelling around it. Blood-stained discharge oozes from the puncture, and bruise-like red patches appear in its vicinity. The patient becomes cold and collapsed, with weak thready pulse, and is usually unconscious. The pupils are dilated. There is no paralysis. If the patient does not die at once, there is still danger of death from bleeding, owing to the great destruction of tissue in the region of the wound and consequent loss of blood, both from it and other parts of the body. Within a few minutes the poison is carried to all regions, and the result is bleeding from the mouth, stomach, intestine, etc.

Treatment.—The objects of treatment are to prevent absorption of the poison and to counteract it as far as possible. To be of any use action must be taken immediately.

A ligature, preferably an india-rubber band or tube, or anything available, such as a stocking, should be tied tightly round the limb about three inches above the wound. A strong solution of potassium permanganate should be used to wash the wound, and crystals should be rubbed into it. Incisions through the skin may be made near the wound and along the limb, to encourage bleeding. If serum is at hand an injection should be given immediately, otherwise some should be obtained without delay. Alcohol is of little use, but strong coffee or sal volatile may be given at intervals of fifteen minutes. The patient should be kept warm and quiet. Sucking the wound is not of any advantage, but if done the mouth should be well rinsed with permanganate solution, in case any broken skin exists through which the poison could be absorbed.

People should never go out of doors after dark without a light, and should always have a lamp or candle at the bedside which can be lighted before getting up when it is dark.

Dog Bites.—In the tropics it is very necessary to protect children from the danger of receiving a dog bite. Rabies or hydrophobia is exceedingly prevalent, and it is difficult to prevent a house dog from fighting or making friends with an outsider. In every Indian station there are packs of jackals, pariah dogs, etc., who haunt its precincts; these often become infected with rabies, and it is not at all uncommon for other dogs to be bitten and infected. Children should not be allowed to make friends with strange dogs, and if a house dog has received a bite of any kind it must be regarded with suspicion and kept away from the children ; and should the bite have been given by a dog known to be affected with rabies, complete isolation for six weeks should be the rule. The symptoms of rabies in a dog may not appear till from three to five weeks after the bite has been received.

Treatment.—All bites from dogs, whether mad or not, must be treated seriously, and if a dog shows any symptoms of rabies, all those who have been licked by the dog, as well as those who have been bitten, should receive prompt treatment. The saliva of a dog affected with rabies is full of poison which may enter the skin through the smallest abrasion.

The symptoms of rabies in a dog may be of two types—rabies with frenzy and dumb rabies.

Rabies with Frenzy.—In this type the dog first appears depressed, then becomes snappish and irritable, hides away in corners, eats dirt, etc. This stage lasts about three days, and is a most dangerous period as the cause of the condition is generally unrecognized. The next stage is that of frenzy or madness, when the dog runs amok, biting all who come in contact with him. This is succeeded by paralysis, then death.

Dumb Rabies.—Dumb rabies is of shorter duration, there is similar dulness and irritability, but there is no frenzy, and the dog soon becomes paralysed and dies.

If the cause of death of a dog is uncertain, and rabies is suspected, examination of the brain will show its presence or absence.

Treatment.—The treatment of a bite from a dog infected with rabies should be prompt. A bandage should at once be fastened tightly round the limb two or three inches above the wound, to which strong carbolic acid or a caustic, such as a hot iron, should be applied. The victims, without exception, should be sent to one of the various Pasteur Institutes which are established in various parts of India for inoculation; this is the only effective treatment, and is successful if the disease has not had too long a start.

Bites received from dogs in which there is no suspicion of rabies, should be well washed and swabbed out with strong carbolic.

Tetanus.—Tetanus is not uncommon in the tropics, and as the germ flourishes in earth and dirt, wounds and abrasions which are soiled and dirty are liable to be an occasion of infection. The germs are more likely to exist in punctured or closed wounds, such as those made by rusty nails, or sharp and dirty instruments.

The symptoms of tetanus may appear in a few hours or days, but usually two or three weeks elapse before they are evident. Tetanus begins with stiffness and cramp-like pains in the muscles of the neck and jaws. The mouth becomes tightly closed so that the taking of food is difficult and finally becomes impossible. The pain and cramp come on in spasms; any sudden movement, sound, or even draught of cold air, may cause a spasm. The breathing becomes hampered, and death may take place in twenty-four hours or may be deferred for four or five days. Some cases are less severe and may recover.

Treatment—The treatment is absolute rest in a quiet and darkened room. Injections of anti-toxin must be given; the doctor, who should be summoned at once, will probably prescribe drugs which will be of help in making the symptoms less distressing.

After any injury, however small, which has been contaminated with earth, it is well to show the wound to the doctor, who will give an injection of anti-tetanus serum as a preventive if there is possibility of infection by the tetanus germ.

Small Injuries.—All abrasions, cuts, wounds, and scratches, whether accidental or inflicted by the fingers, should be washed with clean water and swabbed with tincture of iodine, some of which should always be at hand. This is of importance, especially in the case of children who are so apt to incur small injuries, through which germs may gain entrance.

Bites and Stings of Insects.—Irritating bites and stings should be treated by an application of weak ammonia, or, if severe and inflamed, a piece of lint soaked in lead lotion may be applied and constantly kept moist till the irritation subsides. Mosquito bites are intensely irritating to some people, and the consequent scratching may give rise to infection by other germs which cause great swelling and pain.

Scorpion Stings.—Scorpions are small crab-like creatures about three inches long. Their sting is situated at the end of the tail which, when the sting is given, curves forwards over the back. The wound is acutely painful, and though not dangerous, may be very upsetting to a delicate child. The best treatment is to apply a bandage or ligature above the affected part if it is on a limb, and to well wash the wound with a strong solution of potassium permanganate.

Centipedes.—These many-legged animals are not all poisonous, but the bite of the poisonous variety gives extreme pain. The centipede has a way of clinging so that it is sometimes detached with difficulty, and a bitten child is apt to become panic-stricken. There is generally inflammation round the bite, accompanied by giddiness and vomiting and a general feeling of malaise. Application of strong ammonia will relieve the pain, or lead and opium lotion may be used in the form of a compress.

Spider Bite.—Spiders seldom bite man and only a few varieties are poisonous. Occasionally one sees what is called a " spider lick," a series of blebs which appear in the neck or uncovered portion of the body and are said to be produced by a spider. A soothing lotion or ointment may be applied.

Jigger or Chigger or Sand-Flea.—This flea is found in tropical America, the West Indies, and Africa. It resembles the ordinary flea, but the female sand-flea has a way of burrowing into the skin of an animal or man and laying her eggs there. This causes a good deal of irritation and inflammation round the spot, with subsequent ulceration. When the eggs are mature they are expelled and the flea leaves. The sore if not treated may become infected by micro-organisms, and abscess, or even blood-poisoning or tetanus, may result.

Those whose feet are not protected by shoes suffer most, as the insect is commonly found in the dust and dirt of the ground. Though the feet are usually affected any part of the body may be attacked.

Treatment.—The insect may be extracted with a clean needle before the mischief is done, or turpentine may be applied to destroy the flea in situ. The part should then be painted with tincture of iodine, and a dressing of sulphur ointment on lint applied. The sore should be protected till healing has taken place.

Leeches.—Leeches are to be found in marshy grass and jungle, in all parts of the tropics. When walking through the grass in regions where they are prevalent, it is advisable to wear high boots or gaiters to guard against leeches attaching themselves to the legs. The danger arises from the loss of blood, which in some cases may be great, and, further, the punctures made in the skin do not always heal very readily and are apt to become septic or poisoned. The bites are not painful, and the first intimation may be the blood trickling down the legs. The wound should be cleansed and a compress tightly bound round the leg. Tincture of iodine may be applied to the wound, which should be kept covered till it is healed.

CHAPTER XIX

THE HEALTH OF THE MOTHER

THE maintenance of good health in the tropics depends not only on climate and home surroundings, but also on the manner of life of the individual and the precautions taken to avoid infection.

A mother naturally is subject to the dangers and difficulties incidental to child-bearing and child-rearing; she, like others, is liable to contract fevers and infective illnesses; further, the disastrous effect of a prolonged residence in a tropical climate is only too often seen by her neurasthenic condition.

Nerves.—The nervous system of the colonist, who lives a free and healthy life in the mild climate of the higher altitudes of the tropics, suffers less than that of the dweller in the plains of India or in the low-lying miasmic districts of the colonies. It is not to be disputed, however, that altitude, even with a low temperature, may in some cases have a distinctly trying effect on the nerves, and that the direct rays of a tropical sun are always dangerous to those who brave it with unprotected heads.

The colonist, like the woman who lives in an isolated

Indian station where there is little or no European society, may feel the lack of companionship most acutely, and in the case of a childless woman loneliness is accentuated. Monotony in life and surroundings has a most depressing effect on health and spirits, and the advent of a child has often been the salvation of a neurasthenic wife. Husband and wife, dependent on one another for society, may attain a state of perfect understanding, and the relations between them may be most harmonious; on the other hand, the clash of temperament, when tastes are dissimilar and not supplementary, may lead to domestic unhappiness, which is intensified in the absence of the unifying influence of a family.

Constant and congenial occupation, daily outdoor exercise such as walking or riding, a keen interest in the home and in her husband's pursuits, and the possession of a hobby, are great safeguards for a woman. Change of scene and people at the opportune moment will often prevent a serious breakdown. When trifles become magnified to huge proportions; when thoughtless words, inconsiderate actions, or slight negligences appear to be of great import; or if sudden irrepressible outbursts of rage horrify the usually serene individual, and a black cloud of pessimism blots out the sunshine of hope—it is high time to have a change.

Even though the effort may seem too great, as it often does when nerves are jarred or over-strained, frequent visits should be paid to neighbouring settlers, or an occasional trip should be taken to one of the large stations or cities. Interchange of hospitality is one of the essentials of life in a colony, and must not be neglected.

In official circles, and stations in which there is an European colony of any size, there is usually a very full social life. Official functions, dancing, riding, outdoor games and shopping occupy the time very pleasantly. The nerve strain caused by climate is, in the cities, augmented by an excess rather than a lack of social distractions.

Malaria.—An undetected malarial infection may be the source of chronic ill-health. Mosquitoes, unfortunately, are almost ubiquitous in the tropics, and few people escape malaria. An acute attack cannot be overlooked, but a slight one may pass unnoticed, and the infection being untreated may remain latent. A wise woman for her own sake, as well as that of others, never relaxes her vigilance, and constantly wages war against mosquitoes and other germ-carrying insects. She makes sure that house and compound provide no breeding-places for them. She sees that all, including herself, sleep under adequate mosquito nets; and when out of doors in malarious regions she does not neglect the wearing of a mosquito veil, and even wears high boots or gaiters to protect her legs from bites. She takes quinine regularly as a preventive of malaria. Realizing that the comfort of husband and family depend on her good health, she neglects no precautions, even at the risk of appearing faddy, to keep herself in good condition and free from avoidable illness. In doing this she shows foresight and good sense as well as true devotion to her family.

Dysentery.—An attack of dysentery or other affection of the bowels should receive prompt attention; any such condition should never be allowed to become chronic.

Discharges, etc.—As a rule the woman who leads a healthy life in the tropics is not any more subject to abnormal or excessive periodical discharges than is her sister at home. Medical advice should be obtained at once if unsatisfactory symptoms connected with these should make their appearance. If any swelling or lump in breast or abdomen is detected, or if there is pain in any organ, attention at an early stage may relieve anxiety or avert much future suffering.

Furlough.—Advantage should be taken of every opportunity of going home or of visiting a place of which the climate is invigorating. It is only the very small minority who are able to afford the expenditure of time and money involved by an annual visit home during the hot season; but no woman living in the plains should on any account dispense with a yearly visit to a bracing hill station. A colonist, unlike officials or those in government employment, may not leave his work at regular intervals; but an occasional holiday in a bracing climate is desirable for one and all who live in the tropics, and for women, it is essential.

When the health of a woman flags, or when she is suffering from any chronic disease, a complete change of climate and surroundings is often the only means by which a cure may be affected, and this should not be deferred till too late.

CHAPTER XX

THE MEDICINE CUPBOARD

A LARGE supply of medicines is not necessary; they are apt to deteriorate with keeping, especially in a hot climate. Small quantities only should be bought, and the stock periodically replenished.

All poisons and lotions for external use should be put in plainly labelled coloured glass bottles. They should be kept separate from the ordinary medicines, in a locked compartment. The medicine cupboard itself should be locked and the key kept in a safe place.

Contents of the Cupboard

Books.

First Aid to the Injured } Tropical editions. St.
Home Nursing } John Ambulance.
A Book on the Care of the Baby.

Dressings.

A packet of Iodoform Gauze.
6 First Aid Dressings.
1 packet of Lint.
3 packets of Sterilized Cotton Wool.
1 dozen Bandages (different sizes).

A pair of Scissors with blunt points.

Two Thermometers (it is well to keep one in reserve in case of breakage).

Medicine Glasses: 3-oz., 1-oz., and minim.

An enamelled graduated Pint Measure.

A glass Syringe, to hold three or four ounces.

A Lauder Brunton Lancet (in case) for snake-bite.

An Enema Syringe.

Two Bedpans (small for children and full size for adults).

Drugs.—

- Boracic Acid, ¼ lb.
- Bicarbonate of Soda, ¼ lb.
- Quinine Hydrochloride, 2 ozs.
- Quinine Hydrochloride Tabloids (1 grain, 2 grains, 5 grains) in bottles containing 100 tabloids.
- Permanganate of Potash Crystals, ¼ lb.
- Permanganate of Potash Tabloids (1 grain), one bottle of 100.
- Epsom Salts (Sulphate of Magnesia), ½ lb.
- Alum, ¼ lb.
- Linseed, 1 lb.
- Liquorice Root, ¼ lb.

Medicines.—

- Castor Oil, ½ pint.
- Milk of Magnesia.
- Syrup of Figs.
- Sal Volatile, 4 ozs.
- Parrish's Chemical Food.
- Ipecacuanha Wine, 1 oz.
- Grey Powders (1 grain), one dozen.

For External Application.—

- Tincture of Iodine.
- Lanoline.

Vaseline.
Sulphur Ointment.
Boracic Ointment.
Camphorated Oil.
Sweet Oil.
Calamine Lotion (soothing application), ½ pint.
Lead Lotion (for sprains and swellings), ½ pint.

Boracic Lotion. (Dissolve one teaspoonful of boracic acid in a little hot water and fill up to half a pint.)

Alum Gargle. (Dissolve one teaspoonful of powdered alum in a pint of hot water. Use cold.)

Salt Solution. (Dissolve one teaspoonful of common salt in one pint of hot water. Cool.)

Strong Solution of Permanganate. (Put some crystals of Potassium Permanganate in a 4-oz. bottle. Add water. Shake till dissolved; keep on adding more crystals till the water will take up no more.)

Lysol or Izal, one bottle. These antiseptics should be diluted according to the directions on the bottle, when required.

A Soothing Cough Mixture. (Linseed, one tablespoonful. Liquorice root, a small piece. Juice of one lime. Sugar, two teaspoonfuls. Pour half a pint of boiling water over these ingredients and let stand till cool.)

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